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JOURNAL OF THE CANADIAN SOCIETY OF RADIOLOGICAL TECHNICIANS

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News Items from the Provinces

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EDMONTON BRANCH

The January meeting of the Edmonton Branch was held at the Misericordia Hospital. We are very pleased to see such good attendance at all the monthly meetings.

Dr. G. G. Copestake gave a very interesting lecture on "Cardiac Diseases," describing in detail the procedure of heart catheterization.

At the February meeting there was a lengthy discussion on the short course for x-ray technicians, which is already in operation. Plans were also started for the Alberta Provincial Convention, which is to be held in Edmonton on April 30th, 1955.

Dr. C. F. Hyndman, Radiologist, and Dr. P. Davey, Pathologist, showed a number of interesting slides and gave a lecture on "Pathological Interpretation of Radiological Findings."

The main topic at the March meeting was a discussion of the Resolutions to be presented at the Provincial Convention. A report from the Educational Committee was presented by Miss Joan Graham.

Dr. W. Frew was the guest speaker for the evening. He gave an instructive talk on "X-Rays on Obstetrics."

At the April meeting Mr. Geo. Hall reviewed the Constitution, so that all members would be familiar with it. Nominations for the Chairmen of the various committees on the Provincial Executive also took place.

At the close of the meeting we all enjoyed the lunch which was served by the General Hospital Staff.

The election of officers for the local Branch and a post-convention meeting will be held at the Misericordia on May 9th.

Our best wishes are extended to Mr. Roy Hendra and Mr. Bill White, who have left the x-ray field for other vocations.

Many good wishes are sent to Miss Doris Gregory who recently became the bride of Mr. Gerald Noel.

—HENRIETTA HENDEREK, R.T.,
Sub-Editor.

CALGARY BRANCH

The winter meetings of the Calgary Branch held many interesting speakers and lectures. In November, Dr. Sturdy spoke on "Anomalies in Bone Growth" and in December, he gave a very interesting talk on "The Structure of the Lumbar Spine"; then showed a coloured film on Discograms.

Also in December the slate of officers for the 1955 season was submitted:

President—Mr. Stan Kathrens.

Vice-President—Mr. Sid Matthews.

Secretary-Treasurer—Miss Philippa Boese.

Programme Convenor—Miss Barbara Charman.

Social Convenor—Mr. Leo Jarmaluk.

6Reporter to *The Focal Spot*—Miss Wanda McNamee.

At the January meeting, held at the Alberta Crippled Children's Hospital, Dr. Townsend gave an illustrated lecture on "Some Congenital Deformities" and showed a Red Cross documentary film, "They Dance Again."

The big event for February was our annual banquet and dance held on 14th February at the Nag-Way. The Radiologists very kindly put on a cocktail party for the group before the buffet supper and dancing.

At the April meeting Dr. Vernon spoke on "The Clinical Apects of Diagnosis and Treatment of the Peptic Ulcer."

The delegation from Calgary is looking forward to the Provincial Convention in Edmonton at the end of April.

We wish to congratulate all those who passed their recent examinations.

Submitted for Miss Wanda McNamee, R.T., by

—MISS PHILIPPA BOESE, R.T.

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On February 26th the B.C. Division held its Annual Meeting over in the City of Victoria. An excellent attendance made the meeting a very successful one. The day was divided into three sections and certainly proved to be a busy one. The morning session was the business meeting and started off with messages of welcome from various levels. Mr. Stirling took over the Chair and the reports of committees and other work was carried out without delay. It is pleasant to note that the year was a successful one in many ways. Financially we are in a good position. The place of meeting for 1956 is to be Kelowna if plans for this can be carried out. The members were guests of the staff of St. Joseph's Hospital at a very lovely luncheon for which we were most grateful. The afternoon session was devoted to technical papers and the speakers were most enjoyable to listen to. Dr. F. Stuart spoke on "The Anatomical Approach to Radiography of the Sinuses and Facial Bones." This was an excellent address. Miss Paterson of Royal Jubilee Hospital spoke on "Personal Relationships in Radiography." This was most amusing and she has been asked to send the article to *The Focal Spot* so that other members might enjoy its quiet humour. Dr. Boyd Roberts gave a most comprehensive talk on "The Hazards of Radiation" which gave us a lot of valuable information on this subject. Mr. Len Martin read a paper from Mr. Smith of the Victoria Machinery Depot on "X-Rays in Industry" to conclude a very fine afternoon. Victoria is to be congratulated for the manner in which they arranged everything for this meeting.

The evening was taken over for the Annual Banquet and Dance. This was held in a very quaint old-fashioned hotel near Esquimalt, Cocktails were served through the generosity of the B.C. Division of the Canadian Association of Radiologists. This was gratefully acknowledged and very much appreciated. Mr. Len Martin as chairman did a bang-up job and kept the members in a very good humour—ably assisted no doubt by the donation from the radiologists. Guest speaker was Dr. H. M. Edmison of the Royal Jubilee Hospital. A talk by Dr. Edmison is always an uproarious event and this proved to be no exception. He described a new method of x-ray therapy which was nothing less than a panic from start to finish. The members were helpless with laughter at his descriptions. The rest of the evening until the wee small hours was spent in dancing to the music of Jo Rudd's Orchestra. The officers were installed in their various offices by Mr. Stirling at this meeting and are

President: Mr. Derrald Thompson of Victoria.

1st Vice-President: Miss F. McDonald of Vancouver.

2nd Vice-President: Mr. J. C. Saunders of Victoria.

Secretary: Mrs. Fowler, Vancouver.

Treasurer: Mrs. E. I. Hood, Vancouver.

Director: Mr. S. M. Smith, Vancouver.

Mr. Thompson will be the delegate to the Annual Meeting of the C.S.R.T. and will no doubt make many friends for the B.C. Division.

Vancouver Branch had Dr. Stuart over from Victoria for the April meeting and he repeated his talk on Sinus Radiography for the benefit of those who had not been able to go over to Victoria. The May meeting of the Branch will be held at the Crease Clinic at Essondale Mental Hospital.

Victoria Branch has also been quite busy and at the March meeting had Mrs. Kissinger in charge of the meeting which proved to be quite successful. In April Dr. Jackh, a newcomer to Victoria, addressed the meeting.

Miss Deborah Warren and Sylvia Dalen of Victoria are having a happy time in England.

Ron Thacker has transferred to Saint John, N.B., and is enjoying life in that section of the world.

Miss Donna Brumpton and Mr. Stirling are getting a better response to Student meetings in Vancouver and hope the good attendance will continue.

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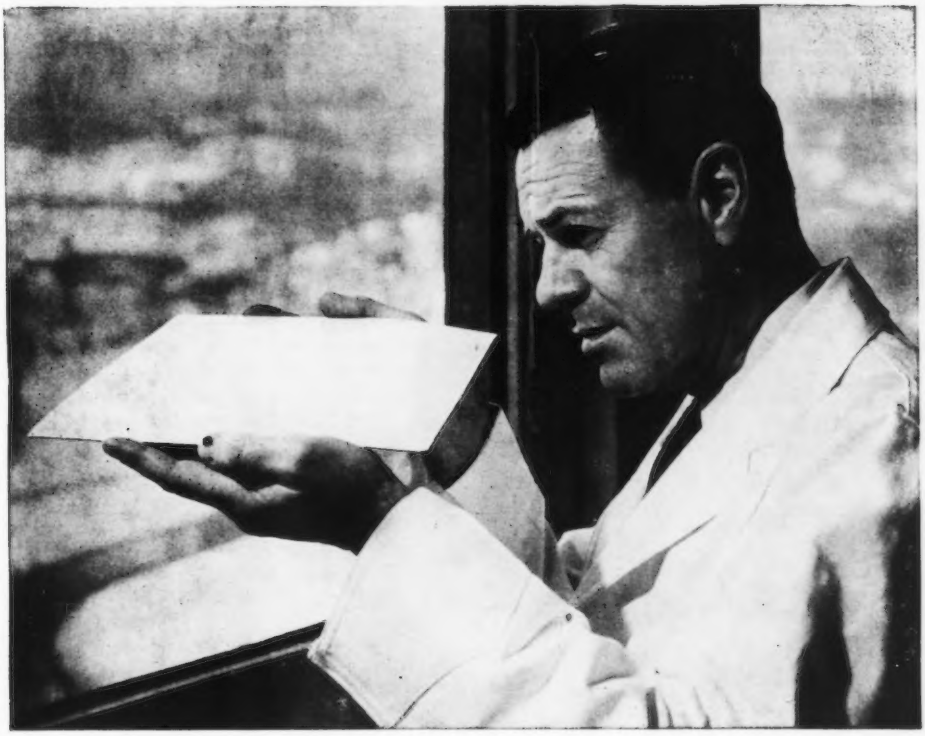

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A recent flu epidemic around the coast cities has given a lot of unrest and misery to many technicians. However, now that Spring is here it is hoped all will soon be wall again. Spring this year apparently consists of temperatures in the low forties.

By the time this appears in print the R.T. Exams will be a thing of the past. However, we do wish all the twenty-one B.C. students who are sitting for this ordeal the very best of luck.

Once again we would like to remind all students and technicians in B.C. that there are still Gaevart Medals to be awarded and would urge them to get busy and try to win one. The medals are lovely and would be really well worth winning.

Grid Lines, the local bulletin of the B.C. Division, made its first appearance in its new Spring outfit and we hear has been receiving the approval of all members. It is a nice shade of blue and if the news is as good as the exterior it will be quite a little bulletin.

Mr. Jerry Saunders and Mr. W. Q. Stirling are co-chairmen for the 1956 meeting of the C.S.R.T. to be held in Victoria. All members are asked to lend whatever assistance they possibly can to really make 1956 in Victoria something to be remembered by the C.S.R.T. In 1950 Vancouver put it across in no mean manner and the capital city should be able to do even better.

In Fifty-six let the slogan be,
To Victoria the lovely for you and me.

—W. Q. STIRLING, R.T.,
Sub-Editor.

MANITOBA DIVISION C.S.R.T.

The first regular meeting for 1955 was held in the Medical College with about 40 members present. Dr. Squire, Radiologist from Dr. Wheeler's Clinic, gave a most interesting and informative address on the subject, "The Atomic Bomb," which he explained and showed the destructiveness of the bomb, and the best way of protecting ourselves from the blast and radiation. Mr. Des Butler, a technician from the Wheeler Clinic, presented a technical paper on the "Radiography of the Ribs." This year at each of the meetings it is our intent to have either a technician or a student presenting technical papers.

The Canadian General Electric Corporation were our hosts at the February meeting held in their new premises at 565 Portage Ave. Mr. Don Phillo of the Technical Service Dept. of the General Electric at Milwaukee, spoke on the subject, "X-Ray Physics." His talk was illustrated by the use of a demonstration panel which contained the complete x-ray circuit in panoramic view. Miss Summerville, a student at the Municipal Hospital, presented a technical paper on "Two Complications of Poliomyelitis." She dealt mainly with the infection and treatment of the kidneys and spine.

The annual Graduation Banquet and Dance was held on February 19th in the Blue Room of the St. Charles Hotel with about 115 plates served. Dr. L. G. Bell, Dean of Medicine at the Medical College, was the guest speaker for the evening. He spoke on "Evolution." Dr. Elliott, Radiologist of the Winnipeg Clinic, addressed the graduates, urging a healthful attitude toward their chosen profession. Miss Joan Barten, who trained at the Winnipeg General Hospital, presented the Valedictory Address. The evening wound up with a couple of hours of dancing which was pleasantly enjoyed by all.

Our March meeting was held at the Winnipeg General Hospital on March 21st. Dr. D. Parkinson, one of Canada's most outstanding neurosurgeons, was our guest speaker at that occasion. Through the use of slides he explained the great importance of accuracy in the radiographing of the skull, especially in the air studies. Two films were shown; one on the preparation of ventriculography, encephalography and angiography and a second on a craniotomy performed under a local anaesthetic.

—ALEX TRIGGERSON, R.T.,
Sub-Editor.

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NEW BRUNSWICK SOCIETY OF X-RAY TECHNICIANS

The regular meeting of the New Brunswick Society of X-Ray Technicians was held at the Lancaster Hospital on Saturday, January 29th, 1955, with the President, Miss Thelma Amos, presiding. Because of weather and road conditions, there was only a fair attendance.

Five new student members were welcomed into the Society.

Following the business meeting three excellent papers were given. The first was by Miss Helen Whalen, of the Tuberculosis Hospital, East Saint John. She dealt with "Tomography, Its Historical Background and Development," and present day applications. Miss Whalen exhibited films to demonstrate the usefulness of layer radiography with respect to diseases of the chest.

Miss Margaret Pringle, of the Victoria Public Hospital, Fredericton, then gave a paper on "Technique for P.A. Sternum." Miss Pringle ably demonstrated, with the aid of film exhibits and line drawings, the advantages of this particular technique to show the sternum without distortion and superimposition of overlying structures.

The last paper of the evening was given by Mr. Rex Radford, of the Victoria Public Hospital, Fredericton. The title of his paper was "Film Copying by Solarization." The advantages of this technique over the more conventional methods were pointed out. Mr. Radford showed several films copied in this manner.

The fixing of the date and place for the Annual Meeting of the New Brunswick Society was discussed and it was decided that it would be held in Moncton on the 28th of May.

Following the meeting refreshments were served by the X-Ray Staff, and we were all taken on a tour of the X-Ray and other new departments.

Congratulations to Miss Helen Whalen, Miss Margaret Pringle, and Marion Smith, who recently passed their C.S.R.T. examinations.

The second general meeting of the New Brunswick Society of X-Ray Technicians was held on Saturday, April 2nd, at the Saint John General Hospital, with the President, Miss Thelma Amos, in the chair.

There was a good attendance at the meeting from Saint John, Moncton, and Fredericton.

The only business of note was the matter of salaries which was again raised, and a committee was appointed to gather information, etc., to be presented at the Anual Meeting.

Technicians were reminded of their forthcoming dance to be held on April 30th at the Admiral Beatty, and it is hoped there will be a good attendance.

At this meeting two students gave papers. The first by Miss Joyce Campbell, of the Victoria Public Hospital, Fredericton, was entitled "Surface Anatomy—Its Importance in Radiography." Miss Campbell exhibited an excellent drawing done by herself, and ably brought home how essential this basic subject is to an x-ray technician.

The second paper of the evening was given by Miss Joan Duncan, of the General Hospital, Saint John. Her paper dealing with Wilhelm Conrad Roentgen, and the discovery of x-rays, proved to be very interesting and entertaining, due to Miss Duncan's novel approach to the subject.

These two papers continue the good response which has been had to a request for papers to be given by technicians. All the papers to date have been of excellent quality, and it is hoped that the technicians will continue to take a more active part in furthering the standards of technical education.

The evening closed with a delightful lunch prepared and served by the technicians of the General Hospital.

The next regular meeting will be held at the Provincial Hospital, early in the fall.

Miss Margot Macaulay, a 1954 graduate from St. Joseph's Hospital, is now taking a post graduate course in Roentgen Therapy at the Sheffield Therapy Institute, in Sheffield, England.

Miss Helen Cameron, another '54 graduate from St. Joseph's Hospital, is now on the staff at the Provincial Hospital, Campbellton, N.B.

(continued on page 62)

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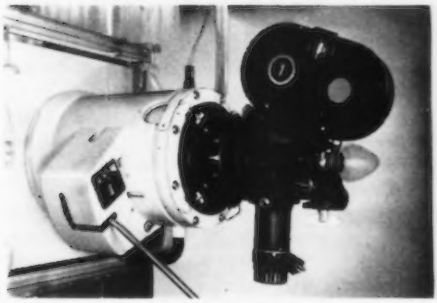

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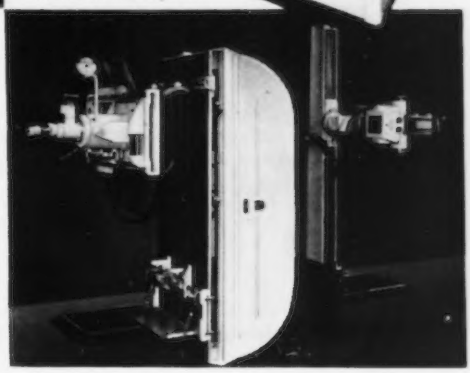

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NOVA SCOTIA DIVISION C.S.R.T.

CAPE BRETON BRANCH

A meeting of the Cape Breton Branch of the Nova Scotia Division of C.S.R.T. was held at St. Rita's Hospital, Sydney, March 28th, at 8 p.m., with about ten members present. Due to illness of several of the members, two meetings were cancelled during the winter months. Minutes of the last meeting were read and approved.

On March 28th, the technicians held a banquet in honour of Dr. and Mrs. H. R. Corbett, who celebrated their silver anniversary. Tables were beautifully decorated for the occasion and entertainment was provided by student nurses and Mr. Alex McGovern, one of the honoured guests. Silver Rosaries (suitably inscribed) were presented to both from the Cape Breton Branch.

Plans are under way for the coming convention which will be held in Halifax in May.

Our guest speaker for the evening was Mr. William Reid, M.Sc., Professer of Physics, who gave an excellent lecture on Electricity and X-Ray Physics which was well received by the students present.

The evening concluded with a delicious lunch served by the hospital staff.

See you at the Convention.

—SR. M. ROBERTA, R.T.,
Sub-Editor.

(N.B.—continued from page 60)

Miss P. E. Davis, graduate from the Royal Cancer Hospital, London, England, is now on the staff at St. Joseph's Hospital, as Radiotherapy Technician.

Miss Marion Smith, a '54 graduate from the Victoria Public Hospital, Fredericton, is now on the staff of the Moncton Tuberculosis Hospital.

Hope to see you all at the C.S.R.T. Annual Convention in September!

—E. M. CURRIE, R.T.,
Sub-Editor.

ONTARIO SOCIETY OF RADIOGRAPHERS

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CENTRAL SECTION

An outstanding meeting was held at St. Joseph's Hospital on February 16th, 1955. In spite of the hazardous weather conditions, more than forty people found their way to Hamilton through rain, snow and heavy fog, to attend a meeting of the Central Section of the Ontario Society of Radiographers.

Andy Douglas was there in his usual good form, presiding over the meeting. He introduced Dr. C. D. Hess, the Chief Radiologist, who gave us a very warm welcome to St. Joseph's Hospital. Dr. Hess spoke for a short while on stereoscopy and suggested that we try a half-inch shift to either side of the centre, and compare this to the standard shift in common use.

Dr. H. C. Jaimet gave a very informative and comprehensive talk on "Radioactive Isotopes" and their use in medicine.

Sister M. Eucharia's paper on Cholecystogrphy was very thorough—an intravenous method of viewing the gall bladder by the use of a radiographic opaque.

A surprise highlight of the evening was a very humorous paper by Dr. O. R. Green, entitled "Journals in a Lighter Vein."

Through the courtesy of Winthrop-Stearns (Company) a marvellous full colour movie was shown of the "Operative Procedure in Cholangiography." This in itself was well worth the trip to Hamilton, weather or not.

In our tour of the X-Ray Department, we viewed the new tomographic equipment, and Mr. Peter French of X-Ray and Radium Industries demonstrated the use of the new tube

(continued on page 58)

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(ONT.—continued from page 62)

mounted overhead crane system.

A buffet supper was provided by the Sisters of the Hospital, which brought a very pleasant evening to a close.

—HUGH J. MENAGH, R.T.,
Toronto.

CENTRAL SECTION

The final meeting of the Central Section for the 1954-5 season was held at Hotel Dieu Hospital, St. Catharines, on April 22nd, with about 60 members present. Our able sectional chairman, Andy Douglas, presided and the meeting was opened with a welcome from Dr. C. W. Gillen, Radiologist at Hotel Dieu. An excellent talk on Radiography of the Cervical Spine was given by Mr. Tony Stechyshyn of St. Catharines General Hospital. Mr. Joseph Luaffat, Chief Technician at Hotel Dieu, spoke on the use of rapid developer in the O.R. and Fracture Room to enable the viewing of radiographs by the surgeons with as little delay as possible. Dr. Gillen spoke on "Pelvimetry Using the Sutherland Scale" and amply demonstrated the value of this method. A pleasant interlude was the presentation of a Kodak Achromatic 5X Magnifier to Mr. Dave Sage as a winner in the General Electric "Wise Owl" competition running in G.E. News. This was presented by Mr. Ralph Davidson, District Manager of the General Electric X-Ray Corporation. After a tour of the x-ray department a very pleasant lunch served by the Sisters of Hotel Dieu rounded off the evening.

ONTARIO SOCIETY OF RADIOGRAPHERS
20th ANNUAL MEETING

The Annual Meeting of the Ontario Society of Radiographers was held on Saturday, June 4th, at the Skyline Hotel, near the Malton Airport, Toronto. This proved to be a very pleasant location away from the rush of the city and the building is new and very comfortable. As is unfortunately so often the case, only about 35 members turned up for the afternoon Business Meeting, although we had three times as many by 7.30 for the dinner and dance. Under the chairmanship of President Wm. Burns, eighteen items on the agenda were debated and dealt with. We were very sorry to hear that Miss Lorraine Crampton, the Secretary, had sustained an injury to her back during the course of her duties at Sunnybrook. At present the length of time she would be disabled seemed uncertain but she apparently had hopes of being up and around again in a few weeks. In her absence Miss Lucy Keogh, Students' Secretary, stepped into the breach and pinch-hit for her. Space does not permit a full description of all the matters discussed but the highlights were as follows: Registration by Legislation was reported on and discussed at length. The Bill was not considered by the Ontario Legislature at the past session but will be presented again. Technical education was another matter given consideration but no definite plan was arrived at. At present, since the lapse of the University of Toronto Extension Course, hospitals are proceeding with individual plans of training. The proposed Surgical Insurance scheme for members of the O.S.R. will probably be dropped for lack of support. The matter of a separate examination and admission to the society of Therapy Technicians was discussed at length and will probably be continued at the C.S.R.T. Annual Meeting in Montreal. The resignation of Mr. Ross McCleary, who has made such an efficient job of the Placement Bureau for several years, was received with regret. A presentation was made to Mr. McCleary recently by the Executive as an appreciation of his excellent work. Mr. John Collins agreed to accept this position in September. During discussion disappointment was expressed that so few new technicians arriving in the country, who were placed in positions by our Placement Bureau, joined the Society; 42 had been placed and only four had joined the O.S.R. This is not a square deal and steps may be taken to correct it in future placements. The resignation of Mr. Roy Fujimoto as *The Focal Spot* distributor was regretfully received. Mrs. Gladys Cassidy kindly agreed to fill this office. Mr. Dave Sage will succeed Mr. John Collins as C.S.R.T. Director for Ontario in September. Mr. Arthur King resigned as *The Focal Spot* sub-editor and it was decided to have the secretaries of the six Ontario sections send in reports of their meetings to *The Focal Spot* editor.

A light ballot of 77 votes gave the new Executive members as Andy Douglas and Florence Brown.

A report on *The Ontario Bulletin* was read by the Editor, Mr. Burton McBride, and he was congratulated upon its attractive new format. The matter of caps for female technicians was discussed and it was suggested that uniformity

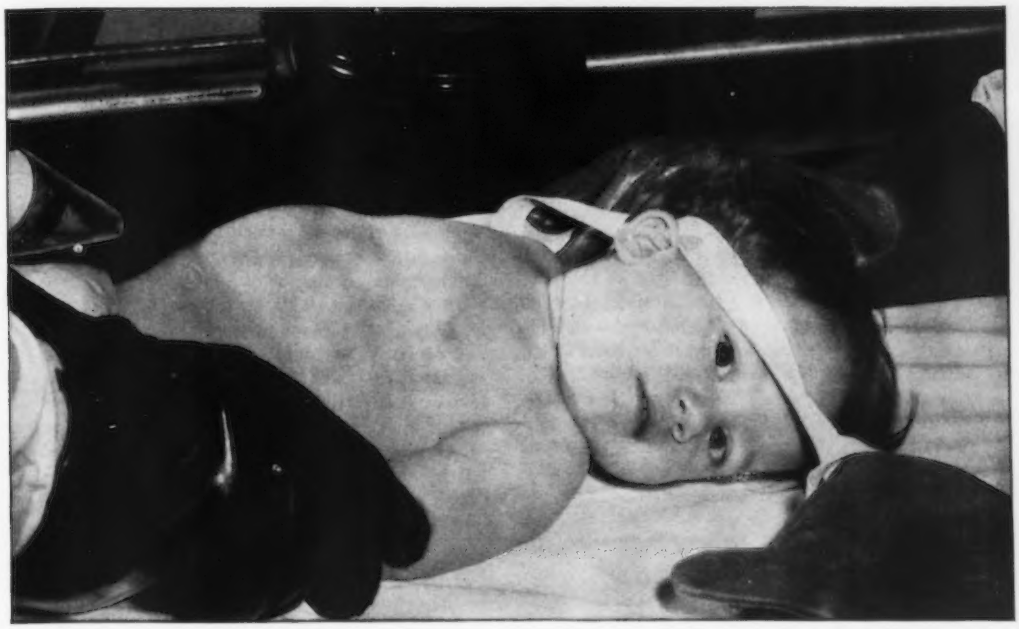
(continued on page 66)

ANSCO PRESENTS:

Children's Radiographic Technic

STUDY NO. 1

SKULL: LATERAL VIEW



Lateral views of children may often be taken best in the unorthodox supine position, as shown. Child is easily immobilized here by assistant holding a webbing strap tautly across the frontal and parietal areas, with the patient's head turned to the lateral position.

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(ONT.—continued from page 64)

of design throughout the Province would be desirable. Mrs. Cameron said this was already being done at the McGregor Clinic, Hamilton, and it was suggested that other departments could follow the design used there. The bands of blue and gold (the C.S.R.T. colors) are added as technicians reach certain stages of proficiency. We suggest those interested write to Mrs. Cameron for full details. The Business Meeting took 3½ hours and was followed by a particularly good (and very welcome!) dinner of roast turkey. Dr. W. R. LaCroix of Sunnybrook Hospital was the guest speaker and dealt in an entertaining manner with quacks and their so-called cures, illustrated with slides of their ads, and testimonials. At the head table in addition to the Executive, were Dr. and Mrs. LaCroix, Dr. and Mrs. J. G. Stapleton (the former being the new chairman of the C.S.R.T. Examining Board), and Mr. Roy Gore, the delegate from the Lakehead Section of the Ontario Society. Mr. Gore came 1,000 miles from Port Arthur on Lake Superior to be present at this meeting and his presence was greatly appreciated. Following the dinner, dancing to a five piece orchestra was thoroughly enjoyed until midnight when—it being Sunday morning—the gathering had to regretfully disperse.

One other item dealt with at the Business Meeting was whether or not to continue the Annual Meeting and the Annual Convention as separate events. It was decided in view of the poor attendance at the Annual Business Meeting to have a combined Convention and Annual Meeting in the spring, starting in 1956. So the O.S.R. Convention will be held this year, as previously announced, on October 7th and 8th at the Royal Connaught Hotel, Hamilton, and about June, 1956, the 21st Annual Meeting and Convention will be held at London, Ont. Mr. Arthur King has accepted the position of Convention Manager.

Dr. C. W. Gillen, Radiologist at Hotel Dieu Hospital, St. Catharines, has successfully obtained his D.M.R. We understand there are only ten radiologists in Canada with this degree.

Just as we go to press comes the sad news that Mr. Dick Kidd, well known by so many Ontario members in his association with X-Ray & Radium Industries, dropped dead from a heart attack on Monday, June 13th.

—L. J. CARTWRIGHT, R.T.

LAKEHEAD SECTION

A well attended meeting of the Lakehead Section was held at McKellar General Hospital, Fort William, on the evening of Wednesday, Jan. 12th. Miss C. Coghlan, President of the group, conducted the short business meeting. Mrs. J. Carniato of the host hospital then introduced the guest speaker, Dr. H. K. Nancekivell. Dr. Nancekivell centered his most interesting address on the value of complete x-ray examination of the chest prior to surgery of the lungs and heart. By means of several well chosen films and slides of selected cases the doctor showed how careful and complete pre-surgical radiographic examination of the chest had proved of infinite value at the time of operation. In other cases incomplete x-ray examination had presented unexpected complications during surgery. In concluding his address the doctor reviewed the various types of chest examinations to be done radiographically. These ranged from the routine conventional views to combined Laminographic and Bronchographic examinations. All present were left with a new impression of the importance of this type of x-ray examination to the doctor and an incentive to accordingly produce the best radiographs possible. An enjoyable luncheon served by members of the x-ray staff rounded out the balance of the meeting.

The Port Arthur General Hospital was the scene of the February meeting held on Wednesday, February 9th. The meeting opened with a short business session, in which members were brought up to date on various phases of new outlooks and negotiations within the Society as a whole. Miss Rhea Mosiondz, R.N., R.T., then presented a well received paper on "The Nursing Care of the Patients Undergoing Radiation Therapy." As Chief Technician of the X-Ray Dept. of the Thunder Bay Cancer Clinic, Miss Mosiondz is well experienced in such matters and conveyed to the members definite impressions of just what may or may not be expected from people undergoing such treatment. Numerous questions directed to Miss Mosiondz at the conclusion of her talk revealed the members' interest on the topic. The speaker then conducted the members through the new Cancer Clinic Section of the hospital. A special treat was the viewing of the recently installed Cobalt Bomb, the workings and safety features of which were shown and explained by Miss

(continued on page 98)

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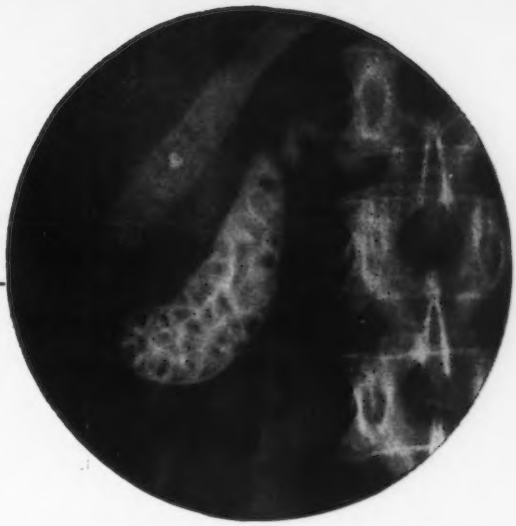

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The Focal Spot

Journal of the Canadian Society of Radiological Technicians

"All our ambitions should be devoted to a faithful fulfilment of duties towards others as well as to ourselves."—Roentgen.

LESLIE J. CARTWRIGHT, R.T.
EDITOR

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Volume 12 TORONTO 1955 NO. 2 *Issue No. 46*

Third Welch Memorial Lecture

Radiography of the Skull

The Importance of Accurate Positioning in Radiography of the Skull, Sinuses, etc.

By C. J. BODLE, R.T., M.S.R. (Hon.), Winnipeg

The honour of being asked to deliver the Third Welch Memorial Lecture is one that I appreciate very sincerely.

The details of the life and work of the man whose memory we honour to-day, the late Herbert M. Welch, better known to the older members as "Bert", are so well known to most of us that it is not necessary for me to add to what has been so well said by the previous lecturers, except perhaps a few words of personal recollection.

I first met him on a train in Winnipeg when we were both on our way to the first Annual General Meeting in Toronto in 1943.

From the first few minutes until we reached Toronto (meal times included), the topic of conversation was the C.S.R.T.

It was apparent that here was a man who was to become a tower of strength to the Society. It was my privilege and pleasure to get to know him well and enjoy working with him during the first ten years in the history of the C.S.R.T. This intense interest in the growth and welfare of the C.S.R.T. continued for the remainder of his life.

He had a keen mind and a readiness to fight for what he believed to be right and in the best interests of the Society.

It is indeed a pleasure for me to have this opporunity to pay tribute to the memory of one who contributed so much to the Society.

THIS subject may seem to be a needless repetition of an old story, but it was suggested to me as one phase of radiographic work where the technical results often leave much to be desired.

Nothing can be more annoying to a busy radiologist than being confronted with films improperly positioned, showing distortion or anatomical structures superimposed on parts required to be shown free from such confusing shadows.

Such faulty results are sometimes due to carelessness, but more often to inadequate knowledge of anatomical relationships of the different structures and insufficient attention to surface landmarks and the proper centering and angulation of the tube.

It is far better to take a little time to be sure that position and centering are correct before making the exposure, than to have to repeat it, thus wasting both time and material, to say nothing of frayed nerves on the part of both radiologist and technician.

One of the most useful things to have in any x-ray department is a dry skull, both for anatomical reference and for trial exposures.

A reasonable knowledge of the anatomi-

cal formation of the skull is probably more important than that of any other part of the skeleton.

For radiographic purposes the skull may be regarded as having two regions, the cranial and the facial; their different structures requiring individual procedures.

The Cranium consists of a box-like structure having sides, top and base.

The facial portion consists of numerous small bones enclosing a number of air cavities, the sinuses.

Three important imaginary lines are used as guides in skull radiography:

(1) The **medial line** or plane, which divides the skull vertically from front to back.
(2) The **inter-orbital line,** a line between the orbits.
(3) The **orbito-meatal line,** a line drawn between the outer canthus of the eye and the external auditory meatus. This is known as **the radiographic base line.**

The use of these various guide lines will be dealt with in discussion of the various projections.

In this lecture we shall deal only with the commonly accepted routine positions.

There are a few alternative positions which may be used where it may be difficult or unwise to try and place the patient in the routine position. Such instances are relatively few and modern equipment being fairly flexible, it is usually much easier to adjust the equipment to the patient than struggle to adjust the patient to the equipment.

We should always remember that the comfort and condition of the patient are the first considerations.

One other very important factor in head work is complete immobilization.

THE SKULL (Lateral Projection)

The lateral radiograph of the skull is a general side view of the entire head and should demonstrate clearly the vault, facial region and upper cervical spine.

The patient is placed in the prone position, with the arm of the head side being examined placed alongside the body; the opposite arm is flexed with the hand resting on the table at shoulder level. In this position a line through the shoulders will make an angle with the table top.

The angulation will vary considerably with the build of the patient.

In most cases it is then possible to place the head in the lateral position with a minimum of neck torsion.

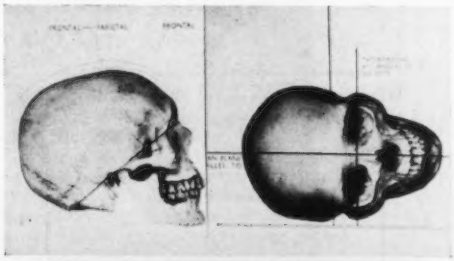

Fig. 1

The essential point in this view is to bring the head into postion with the medial or saggital plane horizontal, thus ensuring a true lateral projection from front to back.

It may not always be possible to place the head with the inter-orbital line vertical, especially with stout patients.

It then becomes necessary to angle the tube until the projection line is parallel to the inter-orbital line, when a true lateral view will result. (Fig. 1.)

Stereoscopic films should be made of the lateral view, with the first exposure down the projection line; i.e. centre through a point about one inch in front of the external auditory meatus and an inch above the base line.

The shift for the second film should always be made in the cephalad direction.

When such films are viewed in the stereoscope the radiologist will be looking slightly downward into the skull toward the base.

If for any reason it is not advisable to try and place the patient in the prone position a good lateral view may be obtained with the patient supine, by placing the film vertically alongside the head and the tube turned to direct the rays across the table, using the stationary grid. A thick non-opaque pad should be placed under the back of the head to raise it from the table top and provide support.

POSTERIOR-ANTERIOR PROJECTION

(Caldwell Postion)

The P.A. projection is used to demonstrate the frontal area of the skull and should show the frontal bone, frontal and

Fig. 2a

b (P.A.)

c (P.A.)

Fig. 2

anterior ethmoid sinuses and the margins of the orbits. When correctly positioned the petrous ridges should be shown at the level of the lower orbital margins. (Fig. 2.)

The patient is prone and the projection line passes through the outer canthus and the top of the ear. (Fig. 2, a and b.) This will require angulation of the tube approximately 20 degrees toward the feet. If a head Bucky is used it may be tilted to the required angle, when no tilt of the tube will be necessary.

ALTERNATE POSTION, A.P.

Patient supine, use same projection line in reverse. Focal-film distance should be increased at least 25% and exposure factors adjusted to compensate for increase in distance. (Stereoscopic films indicated in this procedure.)

ANTERIOR-POSTERIOR PROJECTION

(Fronto-occipital or Towne)

The purpose of this projection is to present an unobstructed view of the occipital region, including the posterior margin of the foramen magnum and the petrous ridges. (Fig. 3.)

Patient supine with the chin well depressed. The pineal gland (if calcified) is well seen in this view, in the medial line of the acciput. It is imperative that there be no lateral rotation of the head, as even a very slight displacement of the pineal body may be important from a diagnostic standpoint.

The projection line in this view runs

Fig. 3a

b (A.P.)

c (P.A.)

Fig. 3

from a point approximately 2 inches above the nasion, which corresponds to the average hair line. Exact centering over the median line is essential. (Fig. 3.)

If for any reason the patient cannot be placed in the above postion, a satisfactory result may be obtained in reverse projection. (Fig. 3c.)

BASE OF SKULL (Submento-vertical)

This projection shows the base of the skull in a horizontal postion. Outstanding features are the petrous ridges, foramen magnum, sphenoid sinuses, mandible, xygomatic arches and various foramina not visualized in other projections. (Fig. 4.)

Patient supine with shoulders raised on pillow or pads, the head tilted backward

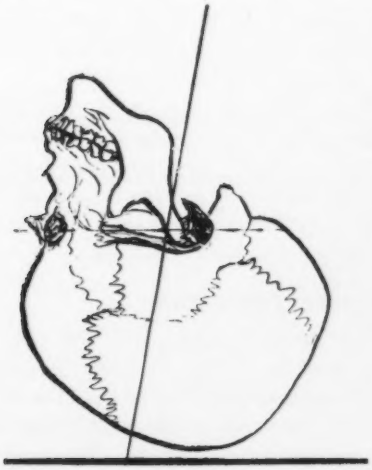

Fig. 4a

until the base line is as nearly parallel to the film as possible. This position is difficult for some patients and if a head Bucky is not available it may be necessary to increase the angulation of the tube from the average of 30 degrees, but if the angulation does not exceed 40 degrees the distortion will not be too great and the end result will be acceptable.

The projection line is midway between the angles of the mandible to a point on the base line about 1 inch in front of the external meatus, the projection line will then make an angle of approximately 95 degrees with the base line. (Fig. 4 a and b.)

(1) FACIAL BONES

Examination of the facial bones requires several projections. P.A. stereoscopic views in the Water's postion, similar to that used for the antra. Structures that should be shown in this view include the antra, nasal bones, malar bones, zygomatic arches, orbital margins and the anterior portion of the mandible.

Where injury to the zygoma is indicated an additional A.P. view may be added.

Fig. 4b

Laterial steroscopic views of the affected side or sides should also be taken.

(2) NASAL BONES

For suspected injury to the nasal bones, a Water's projection is required, also lateral views of both sides of the nasal bones. A dental film placed in contact with the injured side of the nose for sharp detail, and a superior-inferior view on an occlusal film placed between the teeth. Projection through the root of nose.

(3) AIR SINUSES OF SKULL

Adequate radiography of the air sinuses requires a minimum of five projections.

(1) P.A. for frontals and anterior ethmoids. (Caldwell postion).
(2) Water's projection for the antra.
(3) A verto-mental view for the sphenoids.
(4) A true lateral view, which must include all the sinuses and enough of the post nasal space to demonstrate the nasopharynx.
(5) An additional Water's projection made in the upright position to demonstrate any possible fluid level in the sinuses.

In the Water's position the chin should rest on the table top and the head placed so that the base line makes an angle of approximately 40 degrees with the table.

Centre straight down through the vertex to a point just below the junction of the nose and upper lip. This will ensure the petrous ridges being shown below the lower margins of the antra.

Films showing any overlapping of the petrous shadows into the floors of the antra are not acceptable.

SPHENOIDS

In the verto-mental view for the sphenoids, the chin is extended as far as possible without causing the patient too much discomfort. Centre through the vertex with the tube angled so that the projection line passes through a point about 1 inch in front of the external meatus and emerges about the level of the angle of the mandible. The degree of angulation will of course depend on how far the patient is able to extend the chin. (See Fig. 4 for similar projection in reverse.)

(4) MASTOIDS and TEMPORO-MADIBULAR JOINTS

Lateral views of both mastoids should be taken (preferably sterescopic) with both sides on the same film for comparison. An additional view in the Towne position to show the petrous ridges and internal meati is also indicated. Fig. 7b.

For the lateral view, if a special angle board is not available, the patient is placed in the prone postion with the head turned so that the mastoid region is over the centre of the film. If the head is not tilted, the tube must be tilted 15 degrees toward the feet to separate the shadows of the two sides.

Centre 2 inches above and behind the external auditory meatus remote from the film. Repeat exposure on opposite side.

A satisfactory view of the temporo-mandibular joints may be obtained in the same position as for mastoids.

Two exposures are required of each side, one with the mouth closed and one with the mouth open to show the excursion of the condyle of the mandible.

It is advisable to place a large cork or other solid wedge between the teeth for the open mouth view, to prevent involuntary movement of the jaw during exposure and to ensure the same degree of opening of the jaws in both positions.

(5) OPTIC FORAMINA

The head is placed with the nose and forehead in contact with the film holder and the head then rotated until the medial plane makes an angle of approximately 40 degrees with the film. The nose and outer margin of the orbit should both be in contact with the cassette, with the orbit over centre of film.

Centre 2½ inches above and behind the external meatus and tilt tube 10 degrees toward the feet. The projection line will then emerge through the orbit nearest the film, when the optic foramen will be projected in the lower and outer quadrant of the orbit.

Density and contrast are the factors first

noticed in a radiograph.

Density is controlled by all of the technical factors.

Contrast is controlled by the kilovoltage alone.

Avoid over contrast. Exposure factors should be so adjusted that any extreme variation of densities in the different regions of the radiograph is avoided and a reasonably even degree of density over the entire film obtained.

The Kv. P. should be such that adequate penetration of all structures is ensured. A good method is to use a fixed Kv. for the different projections with the Mas as the variable factor.

Detail is of the utmost importance and depends primarily on the use of a small focal spot. As some of the structures of the skull will not be in close contact with the film in the various projections, a relatively long focal distance will help to overcome any unsharpness due to this cause. We have found that a 40-inch focal film distance will give acceptable definition in most cases.

Always use as small a cone as will completely cover the area being examined. The extension type of cylinder cone with a 4-inch opening is excellent for sinus and mastoid radiography.

As some of the positions required in head work are not very comfortable for the patient, it is necessary to develop the habit of working rapidly.

All preliminaries such as angulation of the tube, placing the film, etc., should be completed as far as possible before positioning the patient, thus avoiding any unnecessary discomfort for the patient.

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Mr. William Hood

The members of the C.S.R.T. will be shocked to hear of the sudden passing of Mr. W. (Bill) Hood, husband of our esteemed Secretary-Treasurer. Mr. Hood had been under care for a heart condition a little over a year ago but had progressed to a point where he was able to carry on his business in almost a normal manner. His sudden passing came as a great shock to his many friends in the B.C. Division who knew him to be a very fine man. All our sympathy is extended to Mrs. Hood at this time and although words are empty things she will know that we all share in some small way her tragic loss.

A host of friends gathered on June 14th to pay their last respects to a very fine gentleman.

Flowers were sent from both branches of the B.C. Division, the B.C. Division and the C.S.R.T. expressing our sincere sympathy. —W.Q.S.

Radiography of the Heart

By VERNA MUSGROVE, R.T.
Montreal General Hospital

THE heart besides being the central organ of the emotional system is also the the central organ of the blood vascular system. The heart is cone-shaped and is situated obliquely in the middle mediastinum, largely to the left of the median plane. The base of the heart is directed upward, backward and to the right; its apex, which rests on the diaphragm and against the anterior chest wall, is directed downward, forward and to the left.

The heart is divided into two halves, the right and the left, which from birth are completely separated by a septum which extends from the base to the apex. Each half is further divided by a septum to form an auricle, or atrium and a ventricle. There is one opening between the left auricle and the left ventricle which is guarded by a tricuspid or three-flap valve. There is also an opening between the right auricle and the right ventricle which is guardedby a bicuspid or two-flap valve. These valves prevent the blood from flowing back into the auricles from the ventricles.

The venous blood returning from the body flows through the superior and inferior venae cavae into the right auricle, through the bicuspid valve into the right ventricle, then through the pulmonary artery into the lungs where it is oxygenated. Returning to the left heart the blood flows through four pulmonary veins into the left auricle. Thence it passes through the tricuspid valve into the left ventricle and from there into the aorta and then continues on its way around the body. On all the openings into and out of chambers of the heart there are valves to prevent the backflow of blood.

The purpose of radiographs of the heart is not to see if the heart has been broken but to determine if any of the chambers of the heart are enlarged due to disease, either congenital or acquired, or if any valves or septa are malformed. These films should be a little darker than a routine chest plate to give the best possible outline of the heart.

Haziness of outline is something which must be avoided as much as possible. Blurring could be due to objects moving during the exposure. This is often caused by motion of the heart and of tissue, with the heart beat, and it usually increases in direct proportion to the exposure time.

The best results of a P.A. view of the heart are obtained when it is taken at a 72 inch distance so as to give the least magnification, and the time of exposure should be 1/20th or 1/30th of a second, if possible, to prevent movement.

Patients coming in for a heart examination should have a P.A. film taken first which is developed while the patient waits. The film is shown to the Radiologist

Presented at Twelfth Annual C.S.R.T. Convention, Saint John, N.B., September, 1954.

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Union Hospital, Maple Creek.
VIBERT, AUDREY
St. Therese Hospital, Tisdale.
WALLIN, WM. M.
Union Hospital, Wadena.
WEBB, MRS. PATRICIA
Holy Family Hospital, Prince Albert.
WEIR, W. G.
Box 40, Weyburn.
WILLSIE, BEVERLEY
University Hospital, Saskatoon.
WOYTUIK, MICHAEL D.
Sanatorium, Prince Albert.
WRIGHT, VERNON O.
Victoria Hospital, Prince Albert.
WYLIE, ETHEL
General Hospital, Regina.
WYLIE, E. C.
City Hospital, Saskatoon.

REVEREND SISTERS

SISTER L. BLAIS
St. Joseph Hospital, Gravelbourg.
SISTER M. CHRISTELLA
Holy Family Hospital, Prince Albert.
SISTER ST. GABRIEL
St. Anthony's Hospital, Esterhazy.
SISTER HELEN JOSEPH
St. Michael's Hospital, Broadview.
SISTER DOLORES HAUK
St. Elizabeth Hospital, Humboldt.
SISTER MARCELLA HAAG
St. Joseph's Hospital, Macklin.
SISTER M. A. HOPCROFT
Grey Nuns' Hospital, Regina.
SISTER M. IMELDA
Radville Community Hospital, Radville.
SISTER FLORIANNA KOLLMAN
St. Elizabeth Hospital, Humboldt.
SISTER MARY ROSAIRE
Providence Hospital, Moose Jaw.
SISTER THERESE MARIE
Notre Dame Hospital, North Battleford.
SISTER ST. THOMAS
St. Joseph's General Hospital, Estevan.
SISTER FLORENCE VERRIER
St. Therese Hospital, Tisdale.

NON-ACTIVE MEMBERS

BAKER, MRS. ADELINE
255 - 21st Street West, Prince Albert.
DICKEY, H. W.
206 - 6th Ave., Yorkton.
KANIGAN, MRS. EDNA
111 Electric Bldg., Prince Albert.

The Canadian Society of Radiological Technicians

was incorporated under the laws of the Dominion of Canada in 1943.

Included in the objects as laid down in the Constitution are the following:

To promote and encourage the science and art of Radiological Technique and to consider and discuss all subjects affecting it.

To promote the formation of, to assist, to guide, to encourage and to form a central association for local associations of Radiological Technicians throughout Canada.

To facilitate the exchange of information and ideas on matters affecting the science and practice of radiological technique and allied subjects.

A standard examination for membership in the Canadian Society of Radiological Technicians is set by the Dominion Examining Board, held under the direction of the various member societies. Having passed this examination, a member shall be entitled to be known as a "Registered Technician" (R.T.).

CANADIAN SOCIETY OF RADIOLOGICAL TECHNICIANS

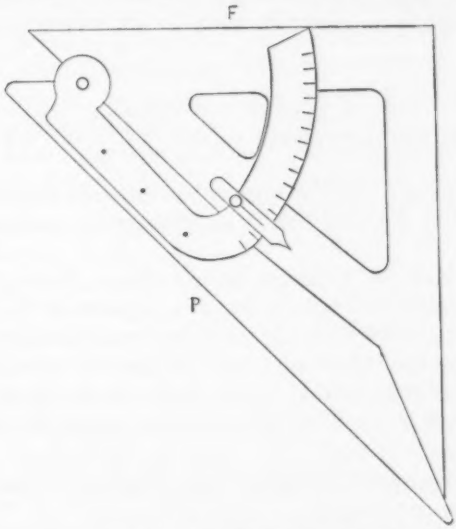
SCIENTIA ET MORES

who then fluoroscopes the patient and decides what other films are necessary and at what degree of rotation the oblique views should be taken.

The technician should be given a statement of the problem involved and instructions as to what views are required. It is then the responsibilty of the technician to see that the technical data which has been used is attached to the films so that they may be duplicated for follow-up studies.

It is most important that the same degree of rotation is used so that films taken at one time may be compared with those taken at another time. Consequently, guessing at the degree of rotation is not good; the degree of rotation used should be measured accurately.

The device we use for measuring the degree of rotation is a very simple one and could be easily copied. It was made for us by one of our student radiologists and consists of a triangle with a 45 degree angle which is hinged. A protractor is attached to this angle which can be altered from a 45 degree to a 90 degree angle. This piece of equipment is used to measure the degree of rotation desired for each position during fluoroscopy and duplicated when the films are taken.



Patient upright; Protractor horizontal
F film, P patient

The degree of rotation desired is set on our device and locked. One edge is placed against the film and the patient is rotated until the chest comes in contact with the side of the triangle.

For taking the opposite oblique the same procedure is followed except the measuring device is turned upside down. In this way it is possible to use the same instrument for both obliques.

For a left anterior-oblique the patient is positioned with the back of the left hand on the crest of the ilium while the right hand is placed on top of the head. The

left shoulder is rounded as far forward as possible touching the plate while the right shoulder and body are rotated away from the plate to the required angle. Left anterior-obliques are usually taken at about a 45 or 65 degree rotation depending upon which structures are to be visualized. The 45 degree rotation gives a good view of the right auricle, the left auricle, left ventricle, sortic window and left pulmonary artery. The 65 degree rotation gives a view of the right ventricle and the left ventricle.

For a right anterior-oblique the patient is positioned with the back of the right hand on the crest of the right ilium while the left hand is placed on top of the head. The right shoulder is rounded forward as far as possible touching the plate while the left shoulder and body are rotated away from the plate to the required angle. Right anterior-obliques are usually taken with about a 60 degree rotation, which gives a good view of the right ventrical conus, and particularly the left auricle. It is most important to have a good view of the left auricle for common heart disease, mitral stenosis. In a right anterior oblique view the left auricle is shown in contact with the oesophagus. With the aid of barium paste in the oesophagus, it can easily be seen if the left auricle is enlarged, because the oesophagus will be displaced backwards.

There are various means of examining and gaining information about the separate heart chambers and associated blood vessels during life without surgery.

These examinations are usually lengthy and intricate therefore I shall not go into them in detail. However I would like to mention just a few facts about them.

One of these procedures is heart catherization. During this examination a radiopaque catheter is introduced into the vein, usually in the left arm, going into the basilic system. The catheter is advanced into the chambers of the heart under fluoroscopic control and spot films are taken. Abnormal communication of the heart chambers is revealed by the unusual routes taken by the tip of the catheter and by the chemical composition of the blood removed from each chamber of the heart.

Another examination of the internal heart structure is angio-cardiography.

For this examination a contrast medium, usually Neo-Iopax or Diodrast is injected very rapidly. Films are taken while this substance is in the heart chambers. This can be done by using either one of two methods. One method is to use a stereoscopic cassette changer. While this method allows a fairly satisfactory study, it records but two momentary phases during an ever-changing series of events. The second method is to use a roll film magazine or rapid cassette changer with which one can take a great number of films. Within practical limitations the more films made during this period of heart opacification the greater the amount of information gained.

Contrast Media

By WILLIAM H. WHITE, R.T.
University of Alberta Hospital, Edmonton, Alberta

A GREAT many of the diagnostic procedures performed in an x-ray department require the use of a contrast medium to help reveal the anatomic evidences of disease and function. The rapid development and general acceptance of contrast media has been one of the outstanding achievements in diagnostic radiology. Their use has made it possible to visualize on the film practically every organ within the human body except the pancreas and the ductless glands.

The first attempt to use a contrast medium was in 1898 when Bismuth was used in the examination of the Gastro-intestinal tract. Since that time numerous substances have been used with new types gradually replacing the old.

Contrast media must have opacity to x-rays markedly different to that of the tissues against which they are to provide contrast. They may be more opaque or less opaque than the surrounding tissues. Barium sulphate and the Iodine compounds comprise the substances in the more opaque group. Oxygen, air and carbon dioxide are categorized as less opaque. These substances can be further classified as follows:

1. INERT MEDIA.
   (Used simply to fill a cavity and demonstrate anatomy only.)
   (a) Barium sulphate.
   (b) Iodized oils.
   (c) Diodrast emulsions.
   (d) Diodrast solutions.
   (e) Air, Oxygen, and Carbon dioxide.

2. ACTIVE MEDIA.
   (Injected or ingested and appearing in an organ which excretes them in order to demonstrate anatomy and physiology.)
   (a) Substances administered either intravenously or orally and excreted by the kidneys and appearing in the urine.
   (b) Substances administered either intravenously or orally and excreted by the liver and appearing in the gallbladder and bile ducts.

It should be emphasized that the use of an opaque medium is essentially a surgical procedure involving a risk, therefore the following cautions must be borne in mind:

1. The technician should never undertake their use unless under the guidance of a Radiologist.
2. Oils that have aged or darkened beyond their original color or show signs of deterioration should never be used.
3. Proper storage in accordance with instructions from the manufacturer.
4. All equipment used in administering must be clean and sterile.
5. The upper limit of allowable dosage must never be exceeded.
6. Use the proper agent for each examination.

With the widespread usage of the numerous contrast media it is important for those who employ them to be familiar with their chemical and physical properties and to know the indications and contra-indications for their use, as well as the hazards incurred by their administra-

tion. The various opaque media generally used to-day will be discussed briefly giving their name, uses, action, etc.

WATER—SOLUBLE AGENTS

DIODRAST—30%-50%

Diodrast is a clear, odorless liquid with a very bitter taste. The 35% solution is for radiographic visualization of the urinary tract by intravenous injection or by direct injection into the renal pelvis through a ureteral catheter. The average dose is 20 c.c. and children are given correspondingly smaller doses, but it depends upon the size and extent of the part under study. Diodrast is also employed in Cerebral Angiograms and Arteriograms, Peripheral Arteriography and Venography, and occasionally for direct Cholangiography through a T tube. The technic in using this agent in Cerebral Arteriograms and Angiograms is extremely complicted and requires accurate timing and teamwork between the physician, technician and patient. This method consists of injecting the substances into the blood and taking exposures simultaneously with the passage of the material through the vessels. Diodrast 50% is employed in obese patients and for those who cannot be given any preparation. It was developed for administration of a larger dose of Diodrast without increasing the volume of solution. Contra-indications include severe liver disorders, nephritis or any critically ill patient.

DIODRAST CONCENTRATES—70%

Diodrast concentrated is employed as a solution for use in Angiocardiography and Thoracic and Abdominal Aortography. The procedures are also extremely complicated and require a thorough knowledge of the procedure to be carried out. Average dose is approximately 40 c.c.

Side effects include dizziness, nausea and vomiting, sense of intense warmth, sweating, pallor, headache, etc.

This agent must be used with caution.

SALPIX

Salpix is a combination of polyvinylpyrrolidone to which has been added sodium acetrizoate.

The iodine content is 65.8%. Salpix is an amber colored, water soluble radiopaque medium used in Hysterosalpingography. The usual dose is 2-6 cc. injected slowly.

Contra-indications to Hysterosalpinggraphy are pregnancy and pelvic infections. If crystals are present—dissolve by warming vial in water and shake.

NEO-IOPAX

Neo-Iopax is a white, odorless powder soluble in water and contains 51.1% Following intravenous injection it is rapidly excreted by the kidneys. Approximately 30 c.c. of the 50% solution are used in Excretory Urography. For Retrograde Pyelography a 50% solution or a diluted solution of 20% is employed, and about 10-15 c.c. for each kidney.

Neo-Iopax is contra-indicated in nephritis, uremia, severe liver damage and should be used cautiously in Tuberculosis, Hyperthyroidism or any serious systemic disease.

UROKON SODIUM

(Sodium Acetrizoate)

Urokon sodium is a white, crystalline powder which is very soluble in water and contains 66% iodine. This substance must be protected from strong light and any sunlight. Following intravenous injection it is rapidly excreted by the kidneys—approximately 60% will be excreted in 3 hours and all of it in 24 hours.

For Excretory Urography a 30% solution is used and the dose is 25 c.c. and correspondingly smaller for children. Either a 15% or 30% solution is used in Retrograde Pyelography and approximately 6 c.c. is used for each kidney pelvis.

Urokon Sodium 30% is used quite frequently in Peripheral Arteriography and Venography because of its increased radiopacity and as it produces less venospasm and pain. The dose is 20-30 c.c. depending on the size of the vessels to be studied.

In Cholangiography a 30% solution is used and the dose is 10-30 c.c.

Occasionally this agent is employed in Hysterosalpinography in a 30% solution and approximately 8-10 c.c. are used.

When Barium Sulphate is contra-indicated or to be avoided, large amounts of Urokon Sodium may be used not exceeding 400 c.c. Contra-indications are few and no delayed reactions have been reported but Urokon is contra-indicated in severe renal insufficiency, allergy, or any serious systemic disease.

Urokon Sodium 70% is employed in Angiocardiography because of its lower toxicity. The usual dose is 40-50 c.c.

The 70% is also used in Nephrography, Intravenous Pyelograms, Thoracic and Translumbar Aortography.

WATERY SUSPENSIONS AND EMULSIONS

BARIUM SULPHATE

This is one of the oldest and most widely used contrast agents.

Barium Sulphate is a white, odorless and tasteless powder that is free from grittiness. It is insoluble in water. Since 1910 it has been used as an opaque radiographic contrast medium in the examination of the Gastro-Intestinal tract. Barium Sulphate must only be taken orally as it is extremely toxic when absorbed. The usual barium content in the average dose is four ounces thoroughly mixed with water to make eight ounces of solution for a Barium meal. For a Barium enema mix one part Barium to three parts water. Various substances such as sugar, flavoring chocolate are used for children. Some prefer the use of gum, agar, bentonite, tragacanth and gelatin in order to sustain suspension for a longer time.

DIONOSIL

Dionosil is an organic compound containing iodine and is employed as a contrast medium for Bronchography.

It has bitter taste and has a white creamy appearance and is more irritant than iodised oils. Two preparations of this substance are available.

1. Aqueous suspension with an iodine content of about 30%.

2. Oily medium with an iodine content of 34%.

The volume of Dionosil generally used in Bronchography is 1 c.c. for each year of age up to a maximum of 20 c.c. for the average adult.

Dionosil should be stored in a cool, dry place and away from light.

IODIZED OIL (Iodochlorol)

Iodochlorol is a product formed by the chemical addition of iodine monochloride to peanut oil. It contains 27 per cent iodine and 7.5 per cent chlorine in organic combination. Iodochlorol is a pale yellow, viscous, non-water-soluble, oily liquid with a faint bland taste.

This substance is employed as a contrast medium in Roentgen diagnosis of pulmonary and bronchial lesions, empyema cavities, sinuses, uterus and fallopian tubes, fistulas and soft tissue sinuses. Iodochlorol is non-irritant but is very

slowly excreted. The dose varies with the capacity of the structure to be examined. It ranges from 1-2 c.c. for small fistulas to 20 c.c. in the bronchial tree.

ETHIODAN

Ethiodan is a mobile liquid which contains approximately 30% iodine in organic combination. It is a colorless to very pale yellow, odorless and viscous liquid. The color generally darkens on long exposure to air. Ethiodan is used in the radiological diagnosis and localization of spinal cord tumors, intraspinal protrusion of intervertebral discs and any other condition in which obstructions in the cerebro-spinal canal or compression of the cord are suspected.

The dose varies from 3 c.c. to 6 c.c. but the amount normally used is 5 c.c.

Ethiodan should never be injected into a patient for whom a lumbar puncture is contra-indicated nor as a contrast medium for other body cavities.

LIPIODOL

Lipiodol is a product formed from Iodized poppyseed oil and contains 40% iodine in organic combination. It is a light yellow, oily solution with no taste. Lipiodol is slowly absorbed but is well tolerated by the tissues and is non-irritating. It is designed especially for Myelography and Bronchography. The dose varies from 15-20 c.c. in Bronchography to 5-6 c.c. in Myelography. The agent should not be employed when lumbar puncture is contra-indicated.

CHOLECYSTOPAQUES AND CHOLANGIOPAQUES

TERIDAX

Teridax is a white, odo.less crystalline powder which is insoluble in water. It is employed as a contrast agent for visualization of the gallbladder, and is excreted—largely by the renal route and the remainder by the G.I. tract. Teridax is well tolerated but is contra-indicated in advanced renal impairement or extreme iodine sensitivity.

TELEPAQUE

Telepaque is a cream colored, tasteless powder with a faintly aromatic odor. It is a water soluble organic iodine compound which contains 67% iodine and is administered orally as a contrast medium in cholecystography. Following injestion it is absorbed from the small intestine and excreted in the bile and subsequently concentrated in the gall bladder where it produces dense opacity of the gall bladder when radiographed. Occasionaly Telepaque permits visualization of the extra-hepatic ducts. Telepaque seldom produces undesirable reaction but it is contra-indicated in acute nephritis and uremia. The dose is 3-6 grams administered orally ten hours prior to the time scheduled for roentgenography. Visualization of the extra hepatic ducts can be obtained with the customary dose in many patients ten minutes after the fat meal. One hour or more after the meal additional exposures should be made to judge whether the gall bladder contracts properly.

PRIODAX

This substance is also used as a medium for cholecystography and contains 51.5% iodine. Priodax is administered orally and the same procedure is employed as with Telepaque. Nausea, vomiting, and diarrhoea occur but are not severe. Contra-indications include acute abdominal symptoms, nephritis and uremia. Approximately 3-6 grams is the usual dose. Priodax is eliminated in the Gastro-Intestinal tract.

CHOLOGRAFIN

Cholografin is a radiopaque fluid for rapid radiographic visualization of the gall bladder and biliary tracts. It is a colorless solution in an aqueous medium. The iodine content is 64%. Cholografin is particularly useful in post-cholecystectomy patients and in those with non-functioning gall bladders.

Following intravenous administration Cholografin is carried to the liver where it is rapidly secreted and starts to appear in the bile within 10-15 minutes after injection, which then permits visualization of the hepatic and common bile ducts and the biliary ducts visualized about 25 minutes after. The gall bladder fills within an hour after injection and maximum filling about two hours later. It is important that Cholografin be injected very slowly over a period of ten minutes and serial ten minute exposures should be made ten to twenty minutes after injection and continued until optimal visualization of the biliary ducts to be examined is obtained. Examination of the gall bladder should be made approximately one to two hours after administration. Additional exposures may be made after the injestion of a fatty meal. It should be emphasized that Cholografin differs from Telepaque and Priodax in that it is excreted by the liver in concentrated solution whereas the others only become visible after concentration in the gall bladder. The usual dose of Cholografin is 40 c.c. intravenously and a test dose of .1 c.c. intradermally. Cholografin may be stored at room temperature but should be protected from strong light.

It is contra-indicated in those patients sensitive to the test dose, hypersensitive to iodine, Graves disease, and in patients with severe impairment of renal function.

AIR AND OXYGEN

Air and oxygen are two contrast media used very often and therefore must not be forgotten. They are either used alone or in conjunction with other opaque media.

Their chief uses are in radiography of the ventricular system of the brain. Other uses are Arthography of the knee joint; in conjection with Barium Sulphate for a Barium enema giving a double contrast; certain chest conditions, and perirenal insufflation.

Turn to next page for foregoing information in tabulated form.

Without Comment

Patients who think the radiographers here are bad tempered, brusque or inattentive to their welfare should see the radiologist.

Radiography (Eng.), May '55.

RADIOLOGICAL CONTRAST MEDIA

THEIR APPLICATIONS, DOSAGE, QUALITIES AND CONTRA-INDICATIONS

Examination:	Medium:	Adult Dose:	Concentration:	Water Solubility:	Contra-Indications:	Side Effects:
Angiocardiography	Urokon Diodrast	40-50 c.c. 40-50 c.c.	70% 70%	Soluble Soluble	Anuria, Uremia, Iodine Sensitivity Severe liver and renal disorders Iodine Sensitivity	Nausea, Vomiting, Flushing, Dizziness, Drop in Blood Pressure
Aortography	Diodrast Urokon	20-40 c.c. 20-40 c.c.	70% 70%	Soluble Soluble	Anuria, Uremia, Iodine Sensitivity Severe liver and renal disorders Iodine Sensitivity	Nausea, Vomiting, Flushing, Dizziness, Drop in Blood Pressure
Arteriography (cerebral)	Diodrast Urokon	6-12 c.c. 6-12 c.c.	35% 30%	Soluble Soluble	Liver disorders and Nephritis Critically ill, Iodine Sensitivity Anurea, Uremia, Iodine Sensitivity	Flushing, Warmth, N&V, Convulsions, Cyanosis Nausea, Vomiting, Flushing, Dizziness, Drop in Blood Pressure
Bronchography	Dionosil Iodochlorol Lipiodol	15-20 c.c. 15-20 c.c. 15-20 c.c.	50% Undiluted 40%	Insoluble Insoluble Insoluble	None Active or latent Hyperthyroidism Idiosyncrasy to Iodine	Febrile Reaction Iodine Sensitivity Iodine Sensitivity
Cholangiography	Iodochlorol Lipiodol	10-20 c.c. 10-20 c.c.	Undiluted Undiluted	Insoluble Insoluble	Inflamation of biliary tract Inflamation of biliary tract	Local Irritation Local Irritation
Intravenous Cholangiography	Cholografin	40 c.c.	Undiluted	Soluble	Jaundice, Liver Disease, Iodine Sensitivity	None
Cholecystography	Telepaque Teridax Priodax	6 tablets 6 tablets 6 tablets	— — —	Insoluble Insoluble Insoluble	Nephritis, Uremia, Acute Abdominal Symptoms	Occasional Nausea and Vomiting, Diarrhoea Occasional Burning in Throat
Gastro-Intestinal Radiography	Barium Sulphate	Variable	30-50%	Insoluble	Orally in Intestinal Obstruction	Constipation, N.V.
Hysterosalpinography	Salpix Lipiodol	5-10 c.c. 5-10 c.c.	Undiluted 40%	Soluble Insoluble	Menstruation, Pregnancy, Pelvic Inflammatory Disease Iodine Sensitivity, Pelvic Inflammatory Disease	Occasional Pelvic Pain Oil Embolism (Occasionaly)
Myleography	Ethiodan Lipiodol	3-6 c.c. 3-6 c.c.	Undiluted 40%	Insoluble Insoluble	Within 10 Days of Lumbar Puncture	Meningeal Reactions
Pyelography (Intravenous)	Diodrast Urokon Neo-Iopax	20 c.c. 25 c.c. 30 c.c.	35-50% 30% 50%	Soluble Soluble Soluble	Severe Liver Disorder, Nephritis, Critically Ill Severe Renal Insufficiency Nephritis, Uremia, any serious systemic disease	Nausea, Vomiting, Flushing, Drop in Blood Pressure None Occasional N. & V. Flushing
(Retrograde)	Diodrast Urokon Neo-Iopax	6-12 c.c. 6-12 c.c. 10-15 c.c.	15-35% 15-30% 20-50%	Soluble Soluble Soluble	Severe Liver Disorder, Nephritis, Critically Ill Severe Renal Insufficiency Nephritis, Uremia, any serious systemic disease	Nausea, Vomiting, Flushing, Drop in Blood Pressure None Occasional N. & V. Flushing
Sinus Tracts, Fistulas Sialography	Iodochlorol	1-20 c.c.	Undiluted	Insoluble	Active or Latent Hyperthydroidism	None
Ventriculography	Air or Oxygen	80-120 c.c.	—	—	None	N. & V. Headache

Courtesy is Contagious

By S. G. JOHNSTON, R.T.

The editor recently came across the following narrative from the pen of the late S. G. Johnston, submitted to The Focal Spot not long before his death. It probably does more than any obituary could to illuminate the kindly character of the writer as we knew him living in Moose Jaw on the western prairies. In an accompanying note Sid wrote: "Sometimes when I read the enclosed it sounds pretty corny. If it is any good for publication, print it 'Anon'; if not, throw it in the waste basket. I read it before a class of our students sometimes."

We have farmed for a good many years, me, my wife, and the boys. Worked hard, good years and bad. This year our crop was a dandy, but somehow I couldn't get interested. Maybe because I hadn't been feeling well, nagging pains below the belt, didn't want to get up in the mornings, little chores seemed like big ones. Lost my appetite too. Wasn't long before the wife said, "Something wrong, Bill?" Oh! not much," said I. "It will soon pass away." But she worried herself, hearing and reading so much about cancer; suggested that I go to see a doctor. Never had much to do with doctors, so didn't like the idea. However, she insisted, so next day off I went to the city for medical advice.

The doctor was a nice guy. Asked lots of questions and gave me a good going-over. "Can't find much wrong," said he. "Your blood count is normal, but it would be better if you had an x-ray examination of the large bowel. I'll phone the hospital and make an appointment. You take some oil to-night and go over in the morning."

Now I was beginning to get a bit nervous, but around 9 a.m. I presented myself at the hospital X-Ray Department. Here I was met by a young lady in white who asked my name and address, whether I had been x-rayed before, if so where and when. I was asked to have a seat and await my turn. Just then a chap in a white coat came along and said, "Are you Mr. C. from Dr. B.? This is something new for you, eh? Well, everything we do is for a purpose. Take it easy, don't be nervous, and you will get along all right." But I still felt a bit scared.

He showed me into a room where I undressed and put on a long gown. Then into a room where he helped me on to a long table with funny gadgets overhead and along the sides. Now I was getting quite worried. "Now," said the chap in the white coat, as he inserted a tube joined to a can, "you will not see anything or feel anything, so don't be nervous." I didn't know what was coming next. He then pressed a bell and in walked a big man wearing gloves, goggles and an apron. "This is Dr. A., Mr. C." "How are you this morning, Mr. C.?" said the doctor. As nervous as I was, I replied, "Not too bad, thank you Doctor." Said he, "What are you complaining of Mr. C.? What made you go to see your doctor?" I told him the best I knew how. "Now, Mr. C., we are going to run in a little fluid. You may feel like expelling it, but just relax and breathe deeply. It will soon ease up." Then I was turned over and a picture taken. "Now to the bathroom, Mr. C. Take plenty of time, then we want another x-ray."

"That is all," said my friend in the white coat, after he had snapped another picture. "You may wash and dress up now." "Is that all there is to it," said I. "That was easy." What do you think is wrong with me?" "Oh! your doctor will tell you that," said he. "He is the one

most interested in you. You see, I belong to an X-Ray Technicians' Society, which lays down a rule that members must not discuss with patients anything along those lines." "What about the pictures, then? May I take them home with me?" "Oh, no," said he, "we keep them here on file along with your report. Your doctor can see them anytime, should you ever take sick again." I could see that he was right so I thanked him for being so kind. Then I dressed, paid my bill, and went down town feeling pretty good.

Next day I called to see my doctor. "Well, Mr. C., we cannot find very much wrong with you. Here is a prescription for a few pills. Folow this diet list for a week or two, then come and see me in about a month's time." "Thank you Doctor. I wouldn't mind going through that again anytime. Every one was so kind to me. Good-bye, sir." I left his office feeling like a million. So good, in fact, that before train time I did a bit of shopping for presents to take home for Ma and the boys. Seemed as though I couldn't get home fast enough to tell them the good news.

The moral of this little story is: While striving for technical perfection, a good technician never forgets that patients are persons and COURTESY is CONTAGIOUS.

TECH WANTED

Successful Candidates in Spring 1955 C.S.R.T. Examinations

ALBERTA
David John Eberhardt
Dorothy Heck
Shirley Mae Johnson
Georgina Catherine Kato
Sheila Kroetsch
Claudette Lamarre
Naoma Mockford
Lillian Thielens
Carol Joyce Smith

BRITISH COLUMBIA
Bernice Mae Anders
Amy Helen Bandrevick
Janet Vivienne Bishop
Frances Charabin
Carole Adrian Coughlan
Eric Alexander Crump
Reta M. Fisher
George B. G. Foster
Trellis Mae Frame
Sara Margaret Laundy
Ann Margaret Norman
Ina Ozol
Marjorie Mary Rattray
Daphne Veronica Stevens
Joanne Barbara Sypnowich
Bridgid Tyrwhitt
Margaret Josephine Waldmann
Russell G. Wilkie
Catherine Windeyer
Mary Irene Woods
Sister Patricia Ann

MANITOBA
Joan Barton
Thomas Donnelly
Jacob Enns
Hendericus Hollander
Janet Kansky
Hannah McBeath
Marie McComb
Lois McKerchar
Albert Simeon
Yvonne Smith

NEWFOUNDLAND
Mercedes Agnes Barrett
Robert Belbin

NOVA SCOTIA
Sister Rita Clare
Sylvia Frances Sampson

ONTARIO
Hazel Bentley
Thelma June Bongard
Irwin Brewer
Margaret Regis Campbell
Fannie Isabel Disley
Adeline Escaf
Elizabeth Anne Flaherty
Bernadette Grawey
Ann Elizabeth Hewson
Beth Hoover
Mary Hannah Kingsbury
Marie Anne Kisley
Ingeborg Kohler
Anna Koszulinski
Joan LaFontaine
Imants Lapins
James R. McGaw
Rose Mary McLoughlin
Earl Paquette
Annemarie Riese
Frances Wait
Siser Mary Damien

QUEBEC
Soeur Irène Gauvreau
Claire Guénette
Monique Paquette
Huguette Pépin
Ghislaine Ringuet
Jeannette Trudeau

SASKATCHEWAN
Alfred Stephen Bloudoff
Walter Daniels
Ethelyne Eichhorn
Ellen R. Lannan
Waldemar Pikulik
David L. Silversides
Genevieve Slakinski
Jeanne Alice Smith
Stefanie Unger
A. Wonsiak
Wesley Allan Zorian

NEW MEMBERS ACCEPTED BY RECIPROCITY
Winifred Ray Cameron
Elsie M. Dumbreck
Gwendoline Olive Gray
Henry Heaton

The Focal Spot

Journal of the Canadian Society of Radiological Technicians

LESLIE J. CARTWRIGHT, R.T.
EDITOR

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Editorial Notes

ACCURACY

We feel that greater accuracy is the outstanding need of many x-ray technicians practising to-day. They know how to do their work, but with the added ingredient of greater accuracy in exposure and positioning they could bring it up to something spectacular in a very short time. Equipment is constantly increasing in accuracy. The technician has an obligation to increase his accuracy in applying the equipment to the production of superlative radiographs. In the hope of stimulating thought and action along these lines we have taken the liberty of reprinting the following extracts from an excellent article "How Much Tolerance?" published in the Royal Bank of Canada "Monthly Letter."

Accuracy is a measure of the tolerance allowed between parts of a machine, or in the actions of a man. To be accurate is to conform to a standard, to be correct, to be truthful and precise.

There is nothing degrading in being accurate. Nearly all grand discoveries of science and nearly all great developments in business have been the rewards of accurate measurement and patient labour in the gathering and sifting of numerical results. In our everyday activities it is far better to make some rough measurement than no measurement at all.

Accurate workmanship calls for the adoption of standard procedures or patterns as a substitute for individual discretion or fancy, but this does not mean that the instinct of workmanship has perished from the earth. When people learned to measure accurately, they found that dimensions could take the place of artistry. Ability to measure accurately gave new talents to unskilled workers. It paved the way for mass production that has raised the standard of living for everyone.

Accuracy depends on standards of measurement, and standards of production depend on accuracy of work. A standard has to be established by appropriate authority or accepted by common consent. It must be permanent, precisely reproducible, and usable in practice. It must pass rigid tests and it must lend itself to definition.

Dr. Percival Gurrey, professor emeritus of the University College of the Gold Coast, referred in a lecture in Toronto last year to the precision-weighing of analytical chemists, whose marvellously delicate balances can weigh the footprints of the fly that walks over their balance-pan; They can weigh a period printed on this page.

When we turn our thoughts from accuracy in the infinitely small to accuracy in the infinitely big, we catch a glimpse of equal marvels. It is shown in geometry that if the ratio of the circumference of a circle to its diameter be written to 35 places of decimals, the result will give the whole circumference of the visible universe without an error as great as the minutest length visible in the most powerful microscope.

To determine the standards we need measurements. Some of these have come down to us from antiquity, and still serve us well: we have added other measurements and refinements to match our needs.

The cubit of Noah's time was the length of a man's forearm, the distance from his elbow to the end of his middle finger. The yard of later years (still used for rough estimates) was the distance from finger tips to the tip of one's nose.

We found, as time went on, that it doesn't make much difference how long the yard is. What really matters is that we all mean the same thing when we speak of a yard. Not all men's arms are the same length: we need a measuring instrument of precision.

King Edward I took a step forward in the 13th Century when he ordered a permanent measuring bar made of iron to serve as a standard yardstick for his kingdom. The French later based a measurement scale on the assumed constancy of the earth's size, and in Newton's time the British turned for precise stands to the swing of the pendulum.

EDITORIAL NOTES

The metric system was not, as is sometimes said, an invention of the 18th Century. It was suggested by Mauton of Lyons in 1670, but it was the French government of 1793 that put the metric system into general use. The metre was one ten-millionth part of the distance from the North Pole to the Equator when measured on a straight line running along the surface of the earth through Paris.

Not many years later, some natural philosophers meeting in Paris speculated that the metre could not be reproduced if the form or size of the earth were changed by collision with a comet. Sir Humphrey Davy proposed as a natural standard the diameter of a capillary tube of glass in which water would rise to a height exactly equal to the tube's diameter. Jacques Babinet suggested that a wave length of light in a vacuum would be better, and through the development of British, Dutch and German scientists and Dr. A. A. Michelson of the University of Chicago, and his colleague Professor E. W. Morley, this plan became widely accepted.

The most precise measurements of length are made with light waves. They measure distances too small to be seen with powerful microscopes. In Scientific Monthly of January, 1949, the Chief of the Spectroscopy Section of the United States Bureau of Standards said this: "Although a wave of green light (mercury 198) is only 1/50,000 inch in length, it can be produced within 1/100,000,000 of its length, and the length measurements with light waves can be made with this accuracy."

It seems a long way from the cubit of Noah's time to the metre of 1793 and the light ray of to-day. None of us can live effectively under old standards of measurement and accuracy. We have to accommodate ourselves to the new conditions, with allowance for the tolerance of the particular job that is ours.

A U.S. AWARD TO MR. T. B. HURST

A very pleasant recognition of the excellent work he has done in the difficult position of successor to the late Percy Ghent as Editor of the CIL NEWSLETTER came to Mr. T. B. Hurst recently when the Association of Industrial Editors at their convention in Houston, Texas, awarded this Canadian production First Prize. It was the intention that "Tommy" should go to Texas to receive the award, but unfortunately pressure of work did not permit the journey. May we add our congratulations to Mr. Hurst on this happy event.

RESOLUTIONS COMMITTEE CHAIRMAN RETIRES

The Chairman of the Resolutions Committee, Mr. S. R. Hendra, Edmonton, has resigned to go farming in Northeastern Alberta. The chairmanship has been assumed by Mr. J. C. Saunders, 3111 Alder Street, Victoria, B.C., the senior member of the Resolutions Committee. Correspondence relative to resolutions should now be forwarded to Mr. Saunders. We wish the best of luck to Mr. Hendra in his agricultural endeavors.

JIMMY SEED RETIRES

"Jimmy" Seed, who for so many years has carried the banner of the Canadian Kodak Company as technical service representative for Ontario, has retired to enjoy life at his charming home in Etobicoke. We wish him many years of well-earned relaxation and hope to still see him at some of our meetings.

THE NEW ONTARIO BULLETIN

Since the last issue of *The Focal Spot* went to press *The Bulletin*, the monthly journal of The Ontario Society of Radiographers, has appeared in a smart new dress. In a shiny cover and carrying full page printed ads., it makes a very attractive medium for keeping in frequent touch with the Ontario membership. May we hand a bouquet to Mr. Burton McBride, Editor; Mr. David Sage, Staff Writer, and to the Executive of the Ontario Society for the excellent job they have made of *The Bulletin*,

B.C. GRID LINES

Apparently the British Columbia Division has also brought out a 1955 Spring model of their publication, *Grid Lines*. This is mentioned by Mr. Stirling in the B.C. Provincial News, but as we have not yet seen a copy we are unable to give further details.

RADIOGRAPHIC FILM MONITORING AVAILABLE

Dr. F. D. Sowby, Medical Director, Radiation Section, Occupational Health Division of National Health and Welfare, Ottawa, announces that research on the type of film badge intended specially for monitoring low energy radiation has been completed and this service will shortly be available to those who work with diagnostic x-rays or gamma rays. Application for the service should be made to Dr. Sowby, Room 412, Laurentian Building, Ottawa. The badges will be worn for two weeks and the cost is 15c per badge per two weeks.

13th Annual C.S.R.T. Conventters, Windsor Hotel, Montreal

September 7-10, 1955

CONVENTION OFFICERS

GENERAL CHAIRMAN	Gordon Greenfield, Queen Elizabeth Hospital, 2100 Marlowe Avenue, Montreal 28.
CO-CHAIRMAN	Yolande Garand, St. Joseph's Sanatorium, 5689 Rosemount Blvd., Montreal.
PROGRAMME AND EXHIBITS	George A. Wilkinson, Royal Victoria Hospital, Montreal 2.
REFRESHER COURSES	Renée Lippée, Royal Victoria Hospital, Montreal 2.
FINANCE	Henry Meadus, P.O. Box 447, Ste. Agathe des Monts.
	Henry Simpkins, Royal Victoria Hospital, Montreal 2.
TREASURER	Lorraine Tremblay, Montreal Fashion Industries Health Centre, 225 Plateau, Montreal.
ENTERTAINMENT	Donald Fisk, Queen Mary Veterans' Hospital, 4565 Queen Mary Road, Montreal.
VISITING WIVES' ENTERTAINMENT	Edwina Boa, Medical Department, Northern Electric Company, Shearer St., Montreal.
SISTERS' HOUSING COMMITTEE	Sister St. Berenice, 890 Dorchester St. East, Montreal.
RECEPTION AND REGISTRATION	Carole Dunn, Central Division, Montreal General Hospital, Montreal.

Montreal, Quebec

WORLD'S LARGEST INLAND SEAPORT

Location of the C.S.R.T. Convention, Sept. 7th to 10th, 1955

By G. A. WILKINSON, R.T., B.Sc.

Photographs by courtesy of C.N.R.

THE Quebec Society of X-Ray Technicians, and in particular those of us who work and live in the City of Montreal, are very happy to have the opportunity of playing host to our fellow technicians and associates across the Dominion, for the Thirteenth Annual General Convention of the C.S.R.T. "Bienvenu a notre ville"—"Welcome to our city."

The bilingualism of our city is something of which we are proud. Both language groups will readily admit that bilingualism does create problems not found in monolingual communities but both groups are also proud that these problems do not prevent a happy communal life. The harmonious co-existence of two peoples of different language, culture and heritage is truly an example to the world.

The bilingual nature of Montreal and the Province of Quebec began almost two hundred years ago following the successful invasion of New France by the British. Slightly more than two hundred years before that, in the year 1535, Jacques Cartier had landed at the Huron Village of Hochelaga, climbed the mountain arising from its centre, named it Mont Royal, and thus discovered the site of present day Montreal. More than a hundred years passed before Paul Chomedey, Sieur de Maisonneuve, founded the city of Montreal and almost another two hundred years elapsed before the city was incorporated.

The location of the island of Montreal, just east of the confluence of the St. Lawrence and Ottawa Rivers, is undoubtedly responsible for the position Montreal holds to-day as the metropolis of Canada. History has recorded innumerable instances of great cities arising at the natural convergences of trade routes. Those of us who are accustomed to think in present day terms of travel relating to high speed trains and planes may find it difficult to realize that water travel was once the quickest and easiest mode of travel, particularly in virgin country. Small wonder then that as Canada expanded from East to West, Montreal grew to become the largest city in Canada and the second largest French speaking community in the world.

The island of Montreal is thirty miles long, between seven and ten miles wide and has an area of one hundred and ninety-four square miles. The city proper occupies about one-quarter of the total area and the island is connected to the mainland by thirteen bridges, the largest being theJacques Cartier, Honore Mercier and the Victoria Jubilee bridges. The city is situated at the head of ocean navigtation about 1,000 miles from the sea and at the of foot of an inland system of canals and waterways that extend 1,200 miles into the heart of the country. Montreal is the headquarters of the country's two great railways, the Canadian National and the Canadian

Pacific and of five of the country's ten chartered banks. It is the headquarters of Civil Aviation for the World and for the Canadian Fur Trade. Dorval Airport on the outskirts of Montreal is maintaining the reputation Montreal has attained as a transportation centre in this era of air travel.

The bilingual culture of Montreal is maintained by and extended by the presence of two great universities—The University of McGill and The University of Montreal —the latter being the largest French university outside of France. Montreal is noted for its French cuisines and indeed for cuisines of a cosmopolitan nature. Montreal boasts of many fine hotels and restaurants where service and atmosphere are unique.

St. Joseph's Oratory, Montreal

Montreal offers many interesting sights to the visitor and bus companies and the Transportation Commission provide means of visiting these points of interest. The open air sightseeing streetcars with their terraced seating provide an excellent and unique means of seeing much of Montreal. Special horse drawn vehicles take the visitors over the parkways of the mountain and a view of Montreal from the lookout is well worth while. Also of interest to the visitor are the Botanical Gardens, which are of world renown. These and many other points of interest make Montreal a mecca for the sightseer.

We sincerely hope that as many technicians as possible will attend the Convention, and in so doing, will benefit in everyway—through attendance at the sessions, through meeting their fellow technicians and through visiting Montreal. We will be looking for you in September.

REFRESHER COURSES

Three Refresher Courses will be given during the Convention, two in English and one in French. Registration is limited to fifty in each course.

Influence of Radiographic Factors on Film Quality

Lecturer: Frank W. Dreisinger, Manager, X-Ray Technical Service, General Electric Company.

First Day—Properties of Commercial Films and Screens.

Second Day—Density—Detail—Contrast.

Third Day—How to Prepare a Technic Chart.

A Radiographer Studies Therapy

Lecturer: G. A. Wilkinson, R.T., B.Sc.

First Day—Factors Relating to Radiography and Therapy as They are Applied to Therapy.

Second Day—Factors Relating to Therapy not Generally Associated with Radiography.

Third Day—Duties of the Therapy Technician.

L'etude Du Bassin Humain

Lecturer: Dr. Lionel Lafleur, Diplôme de l'Université de Paris.

1.er jour—A. LES BASSIN HUMAIN

1. Chez le foetus.
2. Chez l'adulte.
   (a) Homme, (b) Femme.
   Caractères différentiels.
3. La pathologie.
   Répercussion sur la grossesse et l'accouchement.

2.ieme jour—B. LES TYPES DE BASSINS FEMININS

1. La pelvigraphie.
2. La pelvimétrie.
   (a) Les méthodes, (b) Les techniques.
3. La céphalométrie.
   Les présentations foetales.
   Les malformations.

3.ieme jour—

1. L'étude du placenta. Du liquide amniotique, etc.
2. Pathologie concomittante à la grossesse.
3. La radiologie en gynécologie.
   Nos Resultats Sur 2000 Cas

Refresher Course Needed?

In an edition of Siemens *S.R.W. News* the following imaginary dialogue takes place between a Siemens engineer and a radiographer during the handing over of a new x-ray set.

ENG. I suggest that we adopt to begin with the well-proved S.R.W. exposure chart. It states for a p.a. lung exposure 55kV, 20 mAs.

RAD. The voltage appears right to me. My chief likes well-contrasted but not too soft lung radiographs. *I have never calculated in mAs.* How do I, in that case, determine the exposure time?

ENG. That is quite simple. With a tube current of 500 mA, 20 mAs are obtained with an exposure time of 20: 500=0.04 sec.

RAD. *Do not be offended, but that is higher mathematics to me. I do not follow you.*

ENG. Do not be afraid, you will not be bothered by it at all. I will fix the time markings for you when we have agreed on the exposure data, and if you really wish to know at any time with how many mAs you are working you will find the values here in the instructions.

EDITOR'S NOTE

"There is enough written upon this earth
To stir a mutiny in the mildest thoughts,
And arm the minds of infants to exclaims."

From *Radiographer* (Eng.).

C.S.R.T. Convention Headquarters

Windsor Hotel, Montreal

The following are the room rates for the C.S.R.T. Convention to be held at the Windsor Hotel, September 7th to 10th, 1955:

Single room—with bath	$9.00, $10.00 and up
Double room (double bed)—with bath	$12.00
Double room (twin bed)—with bath	$13.00 and up

Please refer to your intention of attending the C.S.R.T. Convention. EARLY REGISTRATION WOULD BE ADVISABLE AS HOTEL ACCOMMODATION IS AT A PREMIUM DURING SEPTEMBER.

Mail requests for reservations DIRECTLY TO THE HOTEL.

Mr. Henry Labrie,
Windsor Hotel,
Dominion Square,
Montreal 2, P.Q.

Plan Your Vacation For September and Visit Montreal

Place d'Armes and Notre Dame Church

Why not bring the whole family? Edwina Boa is planning an interesting programme for the visiting wives (or husbands) and would like to know how many to count on. Also if there is anything you would especially like to see or do in Montreal, let her know.

University of Montreal.

So just drop a line to

Miss Edwina Boa,
c/o Medical Dept.,
Northern Electric Co. Ltd.,
1261 Shearer St., Montreal.

and help her to make your visit an enjoyable one.

RESOLUTIONS

FOR CONSIDERATION AT C.S.R.T. ANNUAL MEETING

As Chairman of the Resolutions Committee, C.S.R.T., I submit the following resolutions for your information. These resolutions represent the sum total of all resolutions received by this committee for presentation at the C.S.R.T. Annual Meeting in Montreal this year. They have been duly considered by this Committee and are considered judicable.

Submitted by the Alberta Division:

WHEREAS at the present time a technician who has not reached his or her majority is not permitted to purchase a lapel pin although they have successfully written the C.S.R.T. examinations;

AND WHEREAS this ruling has resulted in many technicians foregoing the eventual purchase of the Pin after reaching the required age of 21 years;

THEREFORE BE IT RESOLVED that this Pin be available to technicians of any age who have successfully written the C.S.R.T. examinations.

Submitted by the B.C. Division:

WHEREAS at the 1954 meeting of the C.S.R.T. at Saint John, N.B., the following resolution, sponsored by the Ontario Society of Radiographers, was passed, namely,

"WHEREAS in view of the increasing number of cancer therapy centres employing therapy technicians solely and the desire of those in charge of such centres to establish a standard of training for such technicians;

"THEREFORE BE IT RESOLVED that a separate examination be formulated by the Examining Board of the Canadian Society of Radiological Technicians to qualify as registered therapy technicians those so trained to practice as therapy technicians only."

And

WHEREAS this resolution does not specify what form this training and examination will take and at what stage of the present training schedule it will come, and

WHEREAS upon consultation with responsible members of the following professions—medical, nursing, dietary, pharmacy, laboratory and the American Society of X-Ray Technicians, without exception, they all require graduation from a basic course before specializing:

THEREFORE BE IT RESOLVED that the B.C. Division, C.S.R.T., strongly recommend to the Board of Directors, C.S.R.T., that any recommendations being brought in by any special committee that these recommendations be widely publicized to all Divisions for their consideration and recommendations to the Board of Directors, C.S.R.T., before any action is taken on this question at the C.S.R.T. level.

Yours sincerely,

—J. C. SAUNDERS, R.T.
Chairman, Resolutions Committee.

(ONT.—continued from page 66)
Mosiondz. An informal discussion, during which refreshments were served brought the meeting to a close.

The March meeting of this Section was held at St. Joseph's General Hospital, Port Arthur, on Wednesday, March 9th. During the business portion of the meeting considerable discussion ensued as to the sending of one or more local representatives to either the Annual Business Meeting or the Annual Convention of the Ontario Society; and if possible perhaps to both. An interesting and enjoyable movie, "'A' is for Atom," was then shown. This film was kindly loaned to us by the Winnipeg office of the General Electric Co. to whom we express our sincere thanks. A round table discussion followed by refreshments concluded the March meeting.

The McKellar Hospital x-ray staff were again our hosts for the April meeting held on Wednesday, April 13th. During the business portion of this meeting a representative was selected to attend the Annual Business Meeting of the Ontario Society to be held on June 4th. This will be the first time that the Lakehead Section has been represented at this meeting and we hope that such representation will further cement the bond between our Section and the Society as a whole. Two very enjoyable and interesting movies featured the programme portion of the meeting. These were entitled "Man is a Universe" and "Introducing Turkey." The first of these showed some of the work done at the Montreal Neurological Institute and included an actual operation on the brain being performed at the Institute. The second was a coloured travelogue type of film of life in Modern Turkey, which for the moment transported the viewer to an entirely new world. At the conclusion of these films the members were treated to a most delicious lunch, thus bringing to a successful close another meeting of the Lakehead Section.

—R. E. GORE, R.T.,
Sub-Editor.

EASTERN SECTION

Considering the snowstorm which made a skating rink of the city streets, the meeting held Wednesday evening, March 16th, at the Royal Ottawa Sanatorium was well attended with 33 members and guests present.

Dr. T. G. Stoddart, Director of Radiology and Civic Clinic, Ontario Cancer Foundation at the Ottawa Civic Hospital, gave a very interesting and informative address on Cobalt 60 Beam Therapy Unit, outlining the advantages of treatment with this unit over conventional x-ray therapy.

Mr. Herb Clarke, Royal Ottawa Sanatorium, spoke on Body Section Radiography, illustrating his remarks with excellent films.

A film on "The Four Seasons in the Gatineau Hills, Quebec," followed.

Lunch was served with Miss Dorothy Hillis and Mrs. Rena Johnson presiding at the tea-table, tastefully decorated in honour of St. Patrick.

The next and annual meeting will be held at the Ottawa General Hospital, May 14th, 3.30 p.m. sharp. (This will be the last meeting this season, let's all be there.)

Speakers will be—Dr. K. E. Matzinger, Radiologist at the Ottawa General Hospital, and Dr. N. F. A. McSweyn, Ottawa Thoracic Surgeon. Other arrangements are not yet completed.

News Items: Miss Eleanor Ormrod, R.T., formerly at the Ottawa Civic Hospital, has accepted the position of X-Ray Technician at the new Carleton Place and District Memorial Hospital.

Miss Joan Hunter, R.T., formerly of the Ottawa Civic Hospital, has accepted the position of X-Ray Technician at the Boisvert Memorial Hospital, Baie Comeau, Quebec.

Miss Ada Geldart, Ottawa Civic Hospital, and Miss Dorothy Hillis, Civic Clinic, Ontario Cancer Foundation, are off on a Bermuda holiday and will visit Miss Edith McNaughton, R.N., R.T., formerly at the Ottawa Civic Hospital and now at the King Edward VII Memorial Hospital, Hamilton, Bermuda.

Best wishes to Jean Maxwell, R.T., of the Ottawa Civic Hospital, who embarks on the sea of matrimony Easter week-end. Congratulations to Murray McGlashan, the lucky groom.

—AMY M. ADAMS, R.T.,
Ottawa Civic Hospital.

NORTHERN SECTION

The Spring meeting of the Northern Section of the Ontario Society of Radiographers was held April 2nd, 1955, at St. Joseph's Hospital, North Bay. Twenty members were in attendance. Following a word of welcome from the Chairman, Gerald Durette, the meeting was called to order at 8.15 p.m.

We were very pleased to have Mr. Jack Flannagan of Ferranti Electric give a paper on "Image Amplification, Mirror Optics, and Xeroradiography." With the aid of slides, photographs and diagrams, he demonstrated the use of mirrors in radiography and told of their value in early cancer detection. Mr. Flannagan went on to say that Xeroradiography was chiefly used in industry, but stressed its importance in the event of an atomic war. At the conclusion of his talk Mr. Flannagan was warmly thanked by Earl Paquette, Sudbury General Hospital, for such an interesting and unusual paper.

Our second speaker for the evening was Mr. F. H. Umberge, Executive Vice-President of Picker X-Ray Corp. (Canada), who chose as his topic, "Phototiming." A portion of his talk dealt with the electrical viewpoint, while the remainder described the photo-Roentgen unit, used in most hospitals for admission chest x-rays. The fact that there are no calculations necessary is the chief advantage of photo-timing, Mr. Umberge stated. Noting that until several years ago short exposures were impossible, Mr. Umberge went on to say that phototiming holds a great future for x-ray.

During the business session, we discussed the wearing of caps by female and registered technicians, late fees, the Physics Correspondence Course, and plans for our next meeting which will be held in Sault Ste. Marie, June 4th, 1955.

The Physics Correspondence Course, which the Northern Section is sponsoring, has turned out to be a tremendous success. We are pleased to say we now have a total enrolment of 18. To Mr. Dave Younger, Physics Drector at the Sudbury Mining and Technical School, who has donated so much of his time for this worthy project, go many thanks.

At our June meeting, we will hold the annual election of officers for the 1955-56 term. We hope as many members as possible will attend this very important meeting. An excellent programme is being planned by our programme committee.

A film on the cervical spine was shown at the conclusion of the evening by Mr. George Ross, C.I.L., through the courtesy of Sunnybrook Hospital, Toronto.

Refreshments were served by the Sisters of the hospital at the close of the meeting and they were thanked for their hospitality.

—FRANCES QUINN, R.T.,
Secretary-Treasurer,
Northern Section.

QUEBEC SOCIETY OF X-RAY TECHNICIANS

Graduation exercises for twenty-one new members were held on Friday evening, February 11th, 1955, in the Nurses' Residence of Notre Dame Hospital, Montreal. A short business meeting preceded the exercises. We were welcomed by Dr. Leger. A film on "Gastric Series" was shown by Mr. Noel of Boisvert & Janelle Co. Parents and friends of the new graduates were present. Dr. J. W. McKay, Honorary President of our Society and Director of Radiology at the Montreal General Hospital, and Dr. G. Gill, representing the Canadian Society of Radiologists, addressed the gathering in English and French, and later distributed the cerificates. Miss Claire Belanger presented the new members with the Society Pins. Following this we adjourned to the salon where delightful refreshments were served. Miss Vintha Dunn and Miss Lorraine Tremblay looked after the planning of the entertainment and are to be congratulated on the success of their efforts.

Following are the names of the graduates, whom we heartily welcome to our society: Catherine Rowlands, Edna Ervin, Dorothy Jones, Joseph Pavlin, Marie Charette, Jacquelin Cote, Jacqueline Gelinas, Marie Bourdage, Therese Vherer, Gisele St. Hilaire, Sister Marguerite Sauve, Rachel Lasnier, all of Montreal; Maria MacDonald, Lennoxville; Viola Kouri, Sherbrooke; George de Grandpre, St. Hyacinthe; Sister St. Blandin, Sherbrooke; Sister Marie Laurentia, Louisville; Susanne Simoneau, Ottawa; Rolande Dufresne, Gamelin, Que.; Sister Therese du Sacre Coeur, Chicoutimi; Sister Marie Andronic, Dorchester, Que.

Miss Lorraine Tremblay has resigned from the staff of the Montreal General Hospital to become technician for the Clinic of the Montreal Fashion Industries Health Centre. This is a new venture started by the International Ladies Garment Workers' Union—the first in Canada, and should prove to be very interesting

work, as there are 12,000 employees in this union.

A general meeting of the Quebec Society was held on March 26th, 1955, at St. Joseph's Hospital, Lachine. Despite a very blustery, stormy day, we were pleased to see a fairly good number present.

Mother Superior, Sister Lucie des Anges, welcomed us to the Hospital. Sister Marie de la Ste Famille introduced Dr. L. Lafleur, Radiologist at St. Joseph's Hospital, who gave us a very fine lecture on "Effects of X-Radiation on Tissues. Dr. Lafleur was thanked by Miss Andreé Jutras.

Following a business meeting, we were served a delightful tea by the hospital.

14th ANNUAL MEETING

The Annual Meeting of the Quebec Society was held on May 14 at Ste. Jeanne d'Arc Hospital. Dr. A. F. Vallee, radiologist of that hospital, welcomed us cordially after being introduced by Miss Ducharme. He then spoke in French and English on "The Rights and Duties of an X-Ray Technician." We hope to publish this paper in the near future. Dr. Vallee was thanked by Miss Madeleine Magnan.

Following this, reports of the past year were given by the respective officers.

The officers for the coming year were announced as follows:

President—Mr. Donald Fisk.
Vice-President—Miss Andree Jutras.
Secretary-Treasurer—Miss Yolande Garand.
Registrar—Miss Lorraine Tremblay.
Hon. Director—Dr. J. P. Jean.
Directors—Sr. Ste. Berenice, Miss Claire Belanger, Mr. Henry Meadus.

The Gevaert medal winners were announced. Our congratulations to Sr. St. Leonard of St. Joseph Sanitorium and Sr. Marie de St. Famille of St. Joseph's Hospital, Lachine.

Sr. Ste. Berenice won the Gevaert door prize.

Miss Flore Joyal presented our retiring President with a small gift of jewellery in recognition of her work in the past year.

Tea was served after the meeting in the new cafeteria of the hospital.

Miss Claire Belanger has left the staff of St. Joseph's Sanitorium, Rosemount, and is now nurse x-ray technician at the new Beaubien Medical Centre.

On April 22nd a bridge was held in the Auditorium of Misericorde Hospital as a means of raising funds for our convention expenses. A goodly number of technicians and their friends met and enjoyed the evening. We are grateful to a number of our friends—the servicemen of several companies, who donated beautiful door prizes. Our thanks are also due to Sr. Berenice and officials of Misericorde Hospital, who provided coffee for our refreshments as well as putting the beautiful auditorium at our disposal. The evening proved such a success both socially and financially that we hope this is only the first of many such events.

—EDWINA BOA, R.T.,
Sub-Editor.

LA SOCIETE DES TECHNICIANS EN R.X. DE LA PROVINCE DE QUEBEC

Une assemblée générale a eu lieu à l'Hôpital Notre-Dame de Montréal, le 11 février 1955 à la résidence des infirmières à 7½ heures p.m.

Le docteur Jean-Louis Léger souhaita la plus cordiale bienvenue à tous les membres présents. Après une courte séance d'affaires, les certificats furent présentés aux heureux candidats de novembre dernier par le docteur G. Gill pour les membres de langue française, et par le docteur J. W. McKay pour les membres de langue anglaise. Chacun d'eux leur offrirent félicitations et leur souhaitèment une heureuse carrière.

Un magnifique thé "Thé de graduation" organisé par Mlle Dun et Mlle Tremblay avec la coopération financière de M Arthur Elsey de la Cie Dupont, et M de Paul Berty, représentant de Eastman Kodak nous fut servi. Le tout fut un magnifique succès. Nous remercions tous cuex qui, de près ou de loin ont collaboré à rendre si agréable cette soirée de graduation.

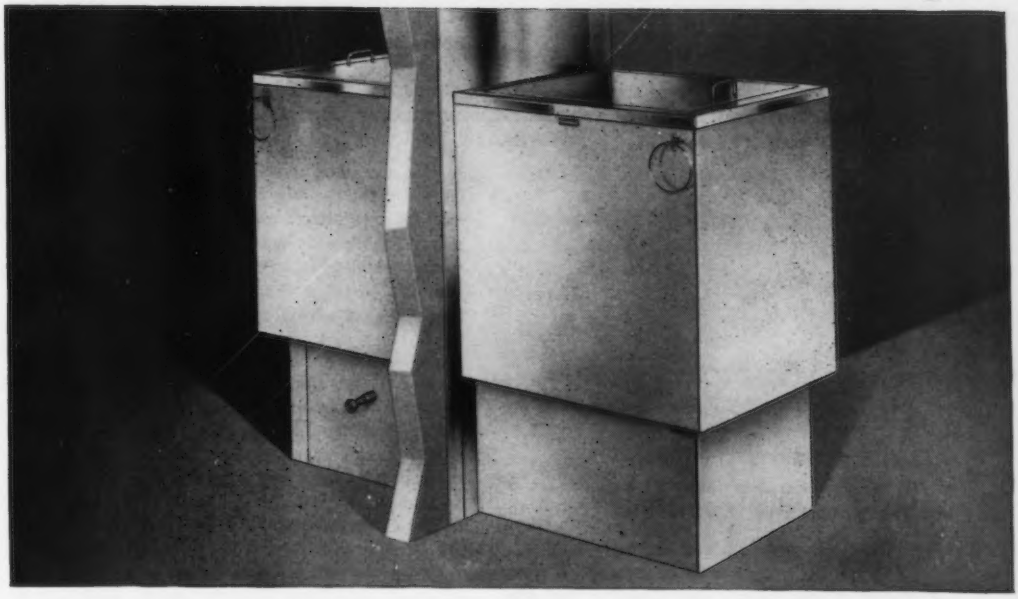
Plusieurs radiologistes nous ont fait l'honneur d'être présents tels que: Dr G. Gill, représentant des radiologistes auprès de la Société des techniciens, le Dr Jean Bouchard, examinateur de la C.S.R.T., le Dr Paul Brodeur, Les Drs J. L. Léger et Jean-Pierre Jean, etc.

Toutes nos félicitations à Mlle Thérèse Blain,

(suite p. 102)

QUICK!

out of the dark room . . . into the light



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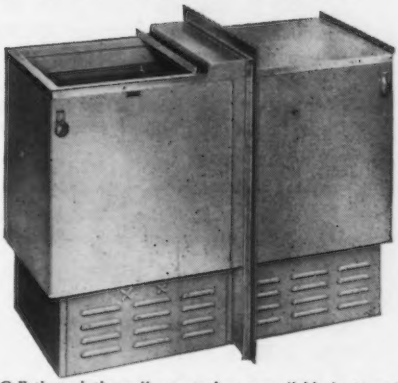

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GENERAL ELECTRIC

(QUE.—suite p. 100)

R.T., élève de Mme Pauline Donalda, D.M., pour sa participation vocale apportée lors de la représentation, au Her Majesty's, du Bal Masqué, opéra de Verdi. Bon succès. Toutes nos félicitations au Dr Albert Jutras, radiologiste à l'Hôtel-Dieu de Montréal qui a remporté le prix annuel Ciba pour sa thèse intitulée "Cholégraphie endo-veineuse." Nos plus sincères remerciements aux autorités de l'Hôpital Notre-Dame pour avoir généreusement fourni le local et assumer le service pour la soirée de graduation.

—ALICE PAQUIN, R.N., R.T.,
Rédactrice adjointe.

SASKATCHEWAN DIVISION C.S.R.T.

SASKATOON BRANCH

The December meeting of the Saskatoon Branch was held at St. Paul's Hospital on the 9th.

Dr. Riley gave an excellent lecture on "The Anatomy of the Heart and Chest." He supported this with illustrations and sections of the heart which proved very instructive to everyone present. The lecture was followed by a film on Urology.

During the business meeting Mr. W. Attridge introduced a new idea to benefit the student technicians. From now on one senior technician would be responsible for answering in full one question submitted by the students. This idea would be continued through our present season.

Our January meeting was held on the 13th at the University Hospital. Dr. Riley was again our guest speaker and presented a lecture on "The Anatomy of the Skull." This lecture was also with illustrations which cleared up many difficulties in the anatomical structure of the skull.

A tour of the X-Ray Department of the new University Hospital and demonstrations of the machines brought the meeting to a close.

The February meeting was held at the City Hospital on the 9th of the month. Due to illness of our programme committee a short but general discussion was held and many problems were attended to. Miss Phyllis Uchman and Mr. W. Attridge presented the answers to the questions submitted to them.

The March gathering was held in the Recreation Hall at the D.V.A. Hospital with the X-Ray Technicians playing host to the Laboratory Technicians of the City. Films on atomic radiation and its effects on human beings were shown. Mr. Fusedale of the Civil Defence organization of Saskatoon gave an interesting talk on the Civil Defence Arrangements here in this city.

REGINA AND MOOSE JAW

The January meeting was held at the Medical Arts Clinic with 30 members present. After a short business meeting we had a social evening.

The February meeting was held at the General Hospital with 35 members present. Committees were elected for the forthcoming convention.

The March meeting was held at Moose Jaw Union Hospital with 28 members present. Miss MacGregor gave the opening address speaking on Poliomyelitis.

Mr. Penley moved a vote of thanks to Mr. Hanoski who is leaving the Society April 1st. He was wished the best of luck in his future work.

After a short business meeting films were shown on the Physics of X-Rays.

—C. B. JOHNSON, R.T.,
Sub-Editor.

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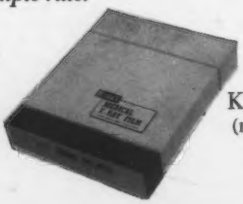

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